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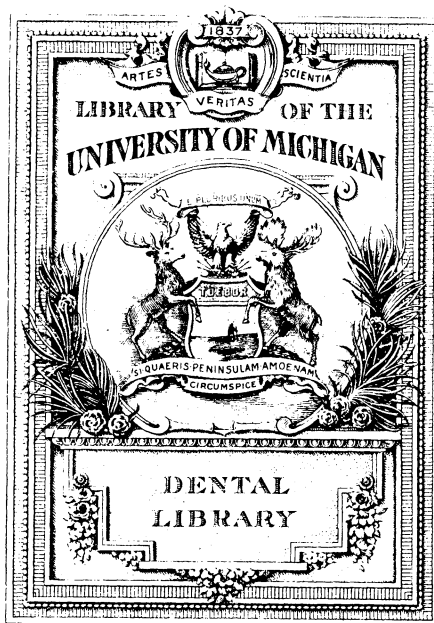
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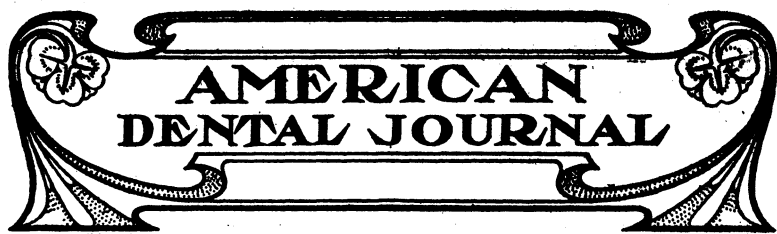
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# **LISTERINE TOOTH POWDER**

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A fourth of a century of continued, satisfactory employment of Listerine has demonstrated to many who have used it during this entire period, that Listerine is the best antiseptic for daily employment in the care and preservation of the teeth. Listerine Tooth Powder, then, is not intended to supplant Listerine in the daily toilet of the teeth, but is offered in response to a popular demand for a frictionary dentifrice to be used in conjunction with this well-known and time-tried antiseptic.

Listerine Tooth Powder is composed of precipitated carbonate of calcium, carbonate of magnesium, oil of cananga, and the antiseptic constituents of Listerine.

The simplicity of its formula, in itself commends the powder. The English precipitated chalk and magnesia are the finest obtainable, and absolutely free from grit; the oil of cananga possesses properties opposed to inflammatory conditions of the gums, and together with the antiseptic constituents of Listerine, adds to the desirable qualities of the product. However, it is to the list of articles which have been omitted from the formula that special attention is directed, and the manufacturers believe the profession will agree that the absence of pumice stone, cuttlefish bone or other abrasive substances, and of sugar, orris root or superficial perfume of any character (the usual ingredients of tooth powders and liable in themselves to fermentative action in the mouth), is a distinct advantage.

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**Lambert Pharmacal Co.**

**St. Louis, U. S. A.**

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# PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION

## PORCELAIN.

BY T. ELHANAN POWELL, D. D. S.

### CHAPTER V.

The average operator does not ordinarily make porcelain inlays for lingual cavities and so the cut in the previous chapter does not



FIG. A.

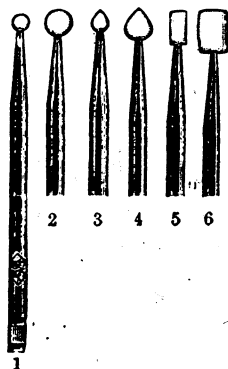
necessarily represent an ideal indication for porcelain; but the cut is used to represent a principle which should, in so far as possible, be observed in all inlay restorations. To state again this principle of cavity preparation: "Shape the cavity in such a manner that the

planes of resistance are at right angles to the stress of the force of mastication where this force comes in contact with the filling."

While the force of mastication does not come in direct contact with all classes of fillings, yet that force does to some extent tend to loosen any filling which has been placed without due regard for the laws of mechanical retention.

Labial inlays are more conspicuous than any other class and for that reason are named first in our classification; also, for their freedom from masticatory force.

These cavities are usually the result of faulty enamel formation occasioned by sickness during the period of gestation resulting in improper nourishment. They are caused also by hereditary scrofulous and other specific diseases. Where this condition obtains the



ARKANSAW POINTS.

twelve anterior teeth are nearly always affected. There is not a total absence of enamel, but usually will be found a pitted and defective surface about half way between the occlusion and gingiva. Sometimes half the surface of the tooth down to the occlusion is so affected.

The diseased conditions are so diversified as to position on the tooth that sometimes within the same mouth it will be necessary to prepare cavities in each of the twelve anterior teeth; so that almost every position on the labial surface of the teeth will be represented by cavities as per diagram (Fig. A).

No. 1. Superior left cuspid had two or three pits in the mesio-

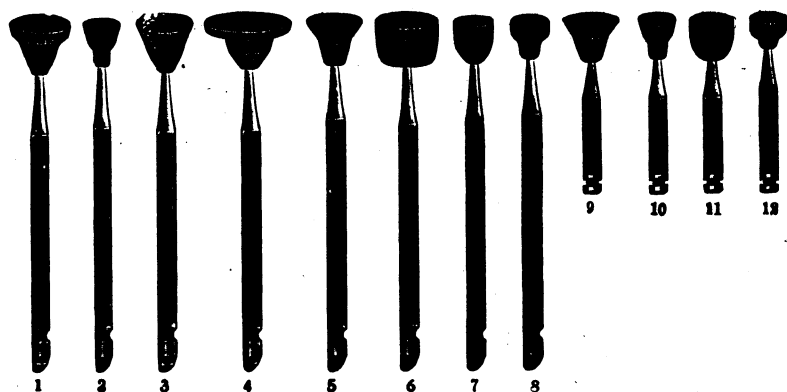
labial aspect in which the dentine showed very distinctly an incipient decay.

We may clearly perceive the unsightliness of gold in this or any of the other cavities shown in the cut.

The shape of the cavity just mentioned was determined by the position of the pits. You will notice that cavities marked 2, 3, 4, 5 and 6 all vary each from the other in shape; the shape of each cavity being determined by the same reasons which determined the shape in No. 1. For instance:

In No. 2 there was a small pit labio, distally, another about half way toward the mesial, and still another, labio mesially located.

It is manifest that it would be neither expedient or right to prepare two or three separate cavities on the face of this tooth. There-



CARBORUNDUM POINTS.

fore, the cavity must extend across the tooth mesio-distally, eradicating all the faults by one filling.

In No. 4. The labial surface of the tooth was so generously pitted that it seemed necessary to make an extensive inlay, including the major portion of the face of the tooth.

Nos. 5 and 6. Here decay was more concentrated, but of sufficient size to make a considerable sacrifice of tooth substance necessary.

The same may be said of No. 3. In Nos. 7, 8, 10, 11 and 12 the same condition obtained as in 3, 5 and 6.

But in No. 9 there was a small patch of decay labio-distally and labio-mesially toward the cutting edge and a horizontal decay along

the median line of the tooth which made a horseshoe shaped cavity necessary in order to include the whole area of decay.

You will notice that straight lines and regular outlines have been studiously avoided—this to conform to principle 5 in chapter iv, which says: "The general outline of the cavity should be gracefully rounded." Usually the color scheme is improved by well-devised curves.

In the preparation of the cavities decay had not progressed sufficiently to incur the use of chisels; the nodules of enamel were removed and the general outline obtained by the use of small carborundum stones. Then depth of cavity was obtained by the use of a sharp round burr. Then a cork-shaped burr was used to get the incline of the cavity from the orifice to the base, leaving the cavity slightly smaller at the base than at the orifice. But when this is done I am not satisfied with the shape of the cavity. I then take a small round bur and make a slight undercut toward the gingiva as indicated by the dots on the cut. This undercut must not exceed in depth the divergent slope of the incisal margin, so that in setting the inlay the gingival portion is first placed in position, then the inlay is dropped snugly into place.

A wedge-lock mechanical retention is thus provided. This is what I call a safe and sane method for preparing cavities for labial inlays.

After having the outline and the undercut prepared as I want it, then the small Arkansas stones are used in smoothing the cavity. Considerable pains should be taken in this part of the work, for unless every portion of the cavity surface is perfectly polished difficulty will be encouraged in drawing the matrix.

Let me say in closing that the labial cavities *demand* porcelain first, last and always, and the use of anything else is inexcusable. Failure to make use of it means humiliation to the patient and damage to the reputation of the dentist. This is justly so because it is malpractice to disfigure a patient through willful negligence or indolence.

(To be continued.)



# **PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION.**

## **OPERATIVE DENTISTRY.**

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BY R. B. TULLER, D. D. S.

CLINICAL PROFESSOR OF OPERATIVE DENTISTRY, CHICAGO COLLEGE OF  
DENTAL SURGERY:

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### **THE AMPUTATION AND EXCISION OF ROOTS OF TEETH.**

It is a peculiar thing that teeth which seem to be strongest and most immune to the usual ravages of decay are more susceptible to the pyorrhoea scourge than are those yielding readily to the influences that produce caries. There is nothing in the relation of the two diseases to account for this.

All practitioners of experience know that another peculiar thing about pyorrhoea is that it not infrequently attacks but one side of a root, going often to the apex, while the other side or sides remain for a long time in the usual healthy condition.

Also concerning teeth of more than one root, one may become entirely denuded of surrounding tissue, and the alveolus so diseased and wasted that there is little or no chance of therapeutic treatment that will bring reproduction of the lost tissue.

In upper first and second molars it is no uncommon thing to find the palatine root of one or more isolated from surrounding parts while the two buccal roots will be entirely healthy and strong and the tooth apparently in its place as firm as ever.

The slow advancement of conditions that bring about such results is usually without pain or serious warning discomfort to the patient, at least until the nerve that enters that diseased root is so exposed and irritated that it becomes inflamed and then begins to respond painfully to thermal changes, and which may go on in due time to such disturbances that the possessor seeks relief of the dentist, and the latter finds a full-fledged case of pulpitis.

Owing to the unbearable pain that the patient may come with, and the difficulty of drilling into a large, sound tooth so highly sensitive (together with peridental inflammation), to apply remedies to the pulp, as might be done in case of deep caries, such teeth are too frequently sacrificed to the forceps.

In diagnosing such cases, if the other two roots are found healthy,

or reasonably so, and firm enough to sustain mastication for even a few years to come, the desirable course to pursue from the operator's standpoint is to amputate the offending root.

First of all, in such a case, the pain must be relieved. Depletion of the engorged pulp is the quickest and surest way. This cannot be done under the circumstances without intensifying the pain for a moment, unless gas or some anaesthetic is resorted to. That takes time and the tooth may be jumping. Let us proceed, then, by the shortest route, though momentarily the pain must be intensified.

Here lies the root exposed the whole length. Through its wall to the pulp is but a short distance. Select a clean, sharp, small round bur and steadying the tooth with the finger go through that root wall in an instant. There is a severe spasm of pain, of course, but with the escape of blood the pressure within the bony walls is relieved and the throbbing soon ceases.

Giving my own experience in a similar case, pressure anaesthesia was subsequently applied to this same opening with most satisfactory results; and then an opening was made from the occlusal surface which permitted the painless removal of the pulp.

Having got rid of the pulp, and particularly as regards the root in question, it was immediately filled with gutta percha. This done, amputation was the next step, the other two roots merely receiving an antiseptic dressing, in this case, until another sitting.

Taking again a sharp fissure burr, amputation was effected in a few brief moments by cutting latterly from the hole either way, the excised part was removed and the pocket treated—curetted for caries—and left with a dressing in.

The stump was dressed down to proper shape with burs and stones and then smoothed and polished; all debris and grit being washed away, and gum tissue, abraded a little, probably, antiseptically treated.

If the pocket in the alveolus where stood the root is carious it must be treated accordingly and antiseptic treatment for a few days should start mending, which in many cases will cause filling up with but slight evidence of ever having been occupied by a root. In many cases, in due time, the gum tissue will grow up snug against the stump, smooth and healthy, completely hiding it and making it difficult to imagine the root had been cut off.

It is very essential, as a rule, that the offending root be filled before the amputation, as it would be difficult to do it properly afterward; and hence the necessity of removing the pulp, if there be one, as a preliminary.

If the tooth has a defunct pulp, as may sometimes be the case, it should be antiseptically treated as is usual in such cases and roots filled prior to amputation.

In some instances the pulp may be alive, all but that affected root. If it thus comes to the operator aching, penetrating the root with a bur may permit the escape of pus instead of blood, or both, and usually with relief from throbbing. However, when the contents of such a root are decomposed escape is found, usually, through the apical end.

Not all teeth are aching when presented to the operator for advice or service. They may not have reached that stage of ailment; but in the event that amputation is deemed the thing to do, that root should always be treated and filled prior to cutting. Other roots of the same tooth may be filled before or after, as suits convenience. Amputation, I believe, always means destroying a pulp if found vital. It also means transforming a cripple menacing the entire tooth to a good, sound, healthy member to do good service for many additional years.

Aside from teeth suffering from pulpitis or pericementitis, the operation itself of amputating is quite simple, though not performed as often as it might be.

Sometimes it may be found that a thin carborundum or other sharp cutting disk may be used in amputating in preference to the bur, but it is in some cases difficult to hold a disk at the right angle to cut as desired.

It is rarely that amputation can be applied to other roots than the upper molars mentioned, first and second, and rarely that any but the palatine root calls for amputation or could be so operated on.

When it comes to single-rooted teeth and bicuspid it is but the extreme apical tip that needs amputating, and it is usually designated as excising, though it frequently amounts to merely grinding the end smooth, freeing it from one or more sharp or ragged points due to disease or irritation that causes partial absorption. These conditions are found only in devitalized teeth and are suspected only from abscesses in connection, being unduly stubborn and unyielding to the

usual abscess treatment. Explorations through the fistulous tract may sometimes determine the nature of the trouble through sense of touch and feeling in the operator's fingers. To operate it is either necessary to enlarge the fistulous tract by degrees by repeated packings, or to dissect away little flaps of gum and then with trephine or large sharp bur cut quickly through the bone until end of root is exposed. Around the end it is necessary to bur out so that the end of the root can be seen and smoothed and polished. Such teeth generally have roots filled prior to the excising operation, or should have, same as in amputation.

To many this operation seems more serious than it really is. The injection of very little cocaine solution into the gum to be operated on produces numbness and a painless operation. It is an important operation in that it is the salvation of many teeth suffering with abscesses which do not readily yield to the usual treatment.

(To Be Continued.)

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#### DENTAL CLINICS FOR SCHOOL CHILDREN.

At a meeting recently held at Bellevue Hospital, Manhattan, was read a letter from the New York Association for Improving the Condition of the Poor, asking Dr. John W. Brannan if it would not be possible for Bellevue and allied hospitals to give efficient dental care to the school children of the city. The matter, after considerable discussion, was referred to a committee, which will investigate the need and expense of establishing a dental clinic. The need is widespread, as is understood when one realizes that 55,300 school children were examined from March to December last year and 18,000 were found to have defective teeth. The percentage of children needing dental care was doubtless greater, as a medical examiner frequently fails to discover conditions that a dentist would see. The doctors in the Board of Health are greatly in favor of dental care for the school children, but all feel that it must be done under legitimate supervision. They claim that dental care is every bit as necessary as vaccination and the precautions taken against tuberculosis. The same doctors know that in many cases of aching teeth brought to the attention of physicians in medical clinics extractions are made when by proper care the teeth could be saved.—*Brooklyn Union*.

## PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION.

### DENTAL PATHOLOGY.

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(DEAN OF DENTAL DEPARTMENT, UNIVERSITY OF ILLINOIS; PROFESSOR OF BACTERIOLOGY AND PATHOLOGY, UNIVERSITY OF ILLINOIS.)

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The discussion of degeneration of the pulp and the various physiological functions that are interfered with in such a process, has been the result of many investigations. Still there is much to be done to elucidate to any satisfactory degree the larger part of the factors that enter into this process. We might discuss for a long time the problems with the various reasons for such and such changes, and we would still be at a loss to give the true etiology, except in those cases where we have irritation produced by external conditions of the teeth. When we speculate on the trophic changes, or rather the trophic causes of local degeneration of tissue, we are dealing with a problem that is up to the present time only speculative.

When we place irritation in contact with tissue substance for a sufficient length of time we will produce cellular degeneration of the structure, to the extent that it will continue long after the irritation has been removed. It is simply the establishment of a habit of the tissue to take on a form of degeneration that will, as we previously stated, keep up for some time. In calcareous degeneration as found in the tissues of many pathological structures, the tissue cells are usually of a normal size with large and small transparent spaces in the cellular substance, and both the cytoplasmia and the nucleus show a destructive change, with simply a deposit of lime salts in the cell. This substance, from a chemical standpoint, contains many of the inorganic salts, and mixed in the calcific deposits are a certain amount of proteids. It apparently does but little harm to the function of the cell for some time, but of course the processes of the cell will sooner or later be interfered with and marked tissue changes will occur.

The discussion of this phase of cellular infiltration, as we have previously stated, does not include the so-called uric acid or urate deposits which take place in the circulatory system which are due to irregularities in the circulatory blood supply of various parts of the body, and more especially in the arterial circulation. This subject will be discussed under a different heading of cell degeneration.

One of the very interesting phases of cellular infiltration is that of pigmentation of the tissues. We are all more or less aware of the fact that most all of the pigmentation of cellular structure of the tissue is due to melanin. The first class of cases of pigmentation of the tissue is sometimes designated as hematogenous pigmentation, and this is divided first into hemoglobin, hemosiderin and hematoidin. It is sometimes very difficult to designate the differential determination of these three classes. Hemoglobin is found under normal conditions in the erythrocytes, and it is presumed by the best authorities that it is only found in these cells. But, however, some authorities differ upon this point, and here it makes but little difference whether it is found in these cells or not. Its presence there exists as a dark red amorphous substance containing iron, which is soluble in an alkali solution and insoluble in alcohol, ether or chloroform. A test for such a substance in tissue is usually performed by adding a few drops of dissolved blood to a freshly made tincture of guaic, followed by an ethereal solution of hydrogen dioxide. The guaic causes the solution of blood to become a milky color, and when the hydrogen dioxide is added a rich blue appearance is given to the solution. This is usually called Almen's test, and in medicolegal parlance it is considered the most profitable test for the hemoglobin. After these above named agents have been added to the blood, if one wishes to go farther with the test, he can add sodium chloride and acetic acid to the substance; and it will be observed that rhombic crystals of a brownish color will be observed under the microscope.

Sometimes when there has been intoxication by the nitrobenzols the chlorate of potash will readily liberate from the corpuscles the hemoglobin and it will be found distributed in the plasma, to which it imparts a very deep red color. It must be understood that this appearance can only be observed under the microscope. This last named test is sometimes applied to the blood to determine whether or not a person is suffering from an infection, that is possibly deep-seated and when the definite cause of the rise of temperature cannot readily be made out, with other forms of symptomatology that goes with infection. When hemoglobin escapes from the corpuscles and diffuses itself in the tissues it combines with sulphureted hydrogen, forming a ferrous sulphide, which gives the black opaque appearance

to the tissues when viewed with the naked eye. The location of such a pathological change is by no means uncommon in the liver.

The hemosiderin is another form which is a yellowish or brownish color in water, alcohol, ether, chloroform, xylol or the benzols. It contains in some cases an acid and in some instances an alkali. The iron that is there gives the blue color when the application of a chemically pure ferrocyanide of potassium and a very dilute hydrochloric acid solution is added. When it is important to know whether or not we have the above named substance in a solution of any kind of organic fluids, it matters not whether it be in serum, saliva, urine, or any other of the body fluids. With the addition of ammonium sulphide we will have a blackish appearance of the solution. We have noted that someone has suggested a test for potassium ferrocyanide in the saliva, by adding a solution of ferric chloride to the saliva. If the ferricyanide is present we will have the bluish or purple color. This does not by any means explain that you have the ferrocyanide in any combination in the saliva. The analysis for the ferrocyanides in the saliva have been made by McGuigan and Mathews, of the Chicago University. They found that there never exists in the saliva, under normal circumstances, a sufficient amount to be obtained with the tests that are given, but that there are other things present that give the blue or purple appearance to normal saliva in many instances. This phase of the question I shall give in more detail at some future time, with the results of a number of investigators in physiological chemistry. Suffice it to say that this substance, hemosiderin, is a pigment that will give all of the characteristic appearances of the test just mentioned, and many times will show some of the characteristics of the test for ferrocyanides. This substance is found to be quite common in certain hemorrhagic conditions in certain tissues in which there has been injury or an infection sufficiently to produce inflammation. In certain stages of inflammatory conditions where diapedesis occurs and the tissues become infiltrated, not always with the blood corpuscles themselves, but with certain cells that have a general characteristic appearance as that of the erythrocytes. When this condition exists only to a slight degree, and especially where there is an inflammatory process, we have absorption and usually the tissue will turn to a normal condition without ever having broken down to the formation of pus.

This class of infiltration known as pigmentation of the tissues is one of vast importance in some cases of pathology, and it has been the object of a great deal of research to determine exactly if possible why it should exist. In some forms of pigmentation it is hard to determine whether we have hematin deposits in the tissue, or whether it is biliary pigmentation in which there has been an absorption of small quantities of bile, which will sometimes give almost identically the same appearance as in case of the extravasation of blood in the tissue. However, if the bile has been absorbed in the tissues for any great length of time it gives the typical icterus appearance of the skin, which is usually designated as jaundice. If a differential determination is desired the Almen's test, as just mentioned, will determine the presence of the hematin of the blood, while the Gmelin test will show the presence of the bile pigment. A small amount of fluid from the tissues placed on a white porcelain dish and a few drops of fuming nitric acid coming in contact with it will give a display of a number of colors that in no sense appear like those given in the test for the ferrous compounds above mentioned. After a few drops of the nitric acid are added to the tissue fluid for the determination of the bile pigment and allowed to stand for some little time, small glistening bodies can be observed under the microscope and many times shows the same crystalline forms as those mentioned in connection above with reference to the hematin test, with the exceptions that the bile pigments turn a green yellowish color.

I think from the tests that I have made on tissue, and especially the mucous membrane of the oral cavity, with the various biological staining agents, we should be prepared to make some very interesting observations in the oral cavity with regards to the presence of certain tissue changes of a pathological nature in this tissue.



# ORIGINAL CONTRIBUTIONS

## TOOTHsome TOPICS.

BY R. B. TULLER.

Did you ever have burglars?

Did you ever have a wife who had frequent attacks of them?

George Inley, D. D. S., has had only one wife—as yet—and only a few months at that; but she has had burglars about steenteen times.

Now, George is of a very conjugal, sympathetic nature, and when his wife has burglars he has them, too. Has to have them whether genuine or not.

Of course it goes without saying that these attacks sometimes, most always, generally come in the dead of night, and wifey gets 'em first.

The attack then gets the doctor with a sudden and severe pinch, or a decided nudge in the ribs, or both, frequently repeated if he is not quickly awake to the situation.

When finally aroused he feels a shivery form and hears a startled, frightened whisper, "Are you awake, dear? Did you hear that noise? Listen!"

Then someone snugs closer and they listen. "There! Hear that? Someone is getting in."

"H-u-s-h, dearie. I think it is only the wind, or a—a p-prowling cat," whispers hubbie, shiveringly, also. But they both listen so intently that each can hear the other's heart beat.

"Oh, there it is again! Hear it? Hear it? It is in the dining room. They've got in and all my wedding silver is down there; not even hid away or covered up. Oh, I can't bear to think of their getting our wedding silver. Where is your pocketbook and gold watch, dear? You better take and hide them under your pillow—and at the same time hand me my jewel case. We'll take it in bed with us. There it goes again! Hear it?" and wifey snugs up closer and two hearts go like trip hammers.

There are times when the doctor enjoys that snuggling up; but when a sharp-cornered, rather bulky jewel case lies in between the conditions are not altogether propitious.

The doctor, however, keeps quiet, breathes rather hard and listens. Wife has breath enough to make frequent whispered interjections. "Hear that? It's nearer. Wasn't that a footstep on the stairs? He's coming up! Where is your revolver, George? Better get up. No, don't; I'm afraid you'll be killed. Go to the 'phone and—no, don't; it is down stairs; you can't go. Go to the window and call the police. No, no. Oh, goodness! What shall we do?"

But the doctor just holds her in his arms and pats her reassuringly and whispers, "Sh-sh; don't get nervous, dearie; don't get n-nervous; don't get ner-vous. I'm sure it is only a c-cat. I w-wish we had had an extension 'phone put in up here. Guess I'll—(desperately)—guess I'll get up and g-go *down there*." Drops one foot (reluctantly) out of bed.

But "dearie" interferes. "Go and leave me alone? (Clutches him.) No, sir!"

"But I m-must, dearie. We can't s-stand this. I *must* g-go. I'll take my g-gun. He'll hear me—I'll give him a chance—and he'll sk-skidoo. Don't b-be afraid, d-dearie. D-don't be a-afraid. Be b-brave, girlie. I'll just slip on my trousers and carry my g-gun."

"Oh, dear! I can't bear to have you go. You might get killed; you might get kill—— Oh, George, did you pay up on that policy? The time was up yesterday. Oh, dearie! if you are going I'm going to go into the bathroom and lock the door. Oh, dear!"

Now, the doctor was a little, just a little, shaky, being startled from a sound sleep. Guess most of us would be. This snooping around in a dark house for an armed and murderous burglar is not the most cheerful duty to perform. Me? I'd put my head under the clothes and just forget it—if I could.

But George had got keyed up and he started down. He went the first three steps and then suddenly stood stock still. Certainly he had heard a stealthy noise behind him as well as a noise in the dining room. As long as he stood there there was no noise close at hand. He moved down about three steps more and again stopped, swung his gun into position, pointing upstairs, and reached out to touch whoever was behind. He knew it wasn't his wife, for he heard her

lock the bathroom door. He touched nothing with his exploring hand, so he descended farther, only to be aware that he was surely being trailed. Without thought, but upon quick impulse, he swung his left behind him and caught hold of—his trailing suspenders! My! what a heavy but muffled step they had made on the carpeted stairs. You wouldn't believe it, but they did.

Although this solved one problem, there was yet a racket going on at intervals in the dining room. At the door he hesitated to decide whether to burst in quickly or steal in quietly. Advantages were greater, he thought, if he sprang in suddenly; so he sprang, and immediately encountered a chair which his momentum upset and it fell on his toe with a thud.

He couldn't restrain an "Ouch!" and slamming the chair away from him he uttered, shameful to relate, some cusswords. Wifey had opened her door a little and she heard it all. The doctor had tackled the burglar; the combat was on and she must do something. Love got the better of fear and a white-robed figure went sailing down, screaming at every step.

As she got near the bottom she heard a pistol shot—or was it? In the dining room she saw a man silhouetted against the window reaching high. She recognized her hero husband and exclaimed: "Merciful goodness! What was it, George? Where is he?"

"Why," he replied with some disgust, "that fool girl left the window up and pulled the shade down over it. A rising wind set it to flopping and that's what we heard. Then when I took hold of the cord to let the shade up of course it got away from me and went up like a pistol shot. I'm trying to get it down. G'wan back to bed; your burglar is dead."

Well, now, this little experience, and some others, taught George that most burglar alarms were largely imaginary, and hence there wasn't much to fear in getting up to investigate strange noises. He had become quite bold and fearless.

Later they moved out of the house into an apartment where several flats were arranged one above the other, all quite alike. The third floor front suited the doctor and his wife and they felt more secure against their old-time enemy.

For several months things ran along smoothly and they had well-nigh forgotten burglars; and then one night there was the same old

alarm—a nudge in the back and a suppressed voice asked: “Dear, do you hear that? Someone is trying to pick our door lock.”

The doctor listened, and sure enough there was a fumbling at the keyhole, a key inserted, a click and the door swung open. There was no time to think, and already George was out of bed and tackling a real simon pure burglar. There were no ceremonies. Seeing a man in the hall by the dim light coming in through the transom from an outer hall light, George sprang for his throat. Having a big, strong hand, he clutched firm and deep and nearly encircled the man’s gullet. At the same moment he was clutched in the same manner. Both men were strong and the battling was fierce.

Dr. Inley was in his nightshirt and his shins were bare and his antagonist had on heavy boots. One moment he was stamping on the doctor’s toes and the next vigorously kicking his shins.

Mrs. Inley did not remain long behind. She came, screaming for help, and being able to recognize her husband in white, she sought to tear away the intruder’s hands so that her doctor could breathe. He got a respite, and cried out: “Get hold of his hair and bang his head against the door post. That’s it. More. Now hang onto his legs; he’s kicking my shins to pieces. Go through his pockets for a gun. Now bang his head again.”

All this time not a word from the intruder. He *couldn’t* speak. Something was the matter with his throat and his tongue protruded and his eyes bulged. He began to weaken and finally sank down, the doctor on top, still holding like death—and it was near death.

The shrieking of the wife and the hubbub had aroused the janitor and others who came to the door. The wife said, “Call the police; we’ve got a burglar.” But just then the janitor got a good light on the face of the man and he exclaimed: “Holdt on! Ai dank dar bane a meestake. Hem bane th’ new tenant on next floor.” And so it proved. He had not counted his landings correctly when he came up and this flat was identical with his. Moreover, his key fitted either lock. His mistake cost him much misery and a week in bed under a physician’s care.

Dr. Inley didn’t have to remain in bed exactly, but his shins and toes were so sore that he couldn’t get out for three days. He had beside several scratches and finger marks on neck and face. He says he never suffered such agony as the kicking of his shins produced.

Says his wife saved the day by her timely help to release those fingers on his throat.

Now, the doctor was sorry for the other fellow and he felt as though he'd like to make some amends, though in no way to blame; but some way the other fellow don't encourage any better acquaintance.

The doctor now says he has an extension 'phone at his bedside and a bull-dog, and he'll let the police investigate any further alarms, or the burglar can have his own way, if the dog doesn't have his. "Nuff's-a-nuff," so says Dr. George Inley. You know him.—*Toothsome Topics Monthly*.

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#### NITROUS OXIDE VS. SOMNOFORM.—ANSWER TO DR. PADEN'S ARTICLE.

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BY P. T. DIAMOND, D. D. S., M. D.

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In an article by Dr. C. M. Paden, on "Somnoform Versus Other Anesthetics in Dental Practice," published in the *AMERICAN DENTAL JOURNAL* of January, 1907, he asks for a "full and free discussion" of his article. Because of his criticisms of what I and others said in a discussion of Dr. Ritter's paper on "Somnoform" read at the Illinois State Dental Meeting at Springfield, and because of the manner in which he misquotes my statements, I feel that I can not but try to satisfy his wish. Furthermore, his restrictions, placed on the statements of some of the most able and scientific men in the profession can not pass without comment. However, his article is so lengthy (only thirteen pages) and filled with so much irrelevant matter that it is hard to select the points worthy of discussion.

It would seem that a comparison of the results of the clinics given by Dr. J. B. Bullard and Dr. C. M. Paden at the "Alumni Clinic" at the Chicago College of Dental Surgery, January 17, 1907, would be sufficient to convince anyone that nitrous oxide is superior to somnoform. Dr. Bullard administered nitrous oxide to a student of the college using an ordinary Hurd apparatus and kept the patient continually under the anesthetic more than nine minutes, or as long as he desired, as he had some very difficult impacted roots

to remove and took plenty of time while operating. This, contrary to the statement of Dr. Paden, that the limit of time of the duration of nitrous oxide anesthesia is but forty seconds. Further, the patient showed no symptoms of nausea or vomiting.

Dr. Paden kept his patient under somnoform only thirty-five seconds and, although he had failed to extract the upper third molar he attempted to remove, he refused to administer the mixture a second time, saying he thought it inadvisable, though the patient did not show any symptoms of collapse. In fact, the patient appeared to act the same as most patients do who have just "come out" from somnoform, contradicting the claim that it can be administered a number of times in succession. Dr. Paden then excused himself for not having more patients to operate on, and said he would show us how it acted on himself. He took it very quietly, remaining "under" the regulation period and "came out" very nice and easy. But it was noticeable that his eyelids fluttered during the whole time he was supposed to be anesthetized. Perhaps he did not care about taking so much that it would make him "seasick." When his clinic was about completed the patient he had turned away, came back to have the tooth removed. He got the tooth this time but the duration of the anaesthetic was only twenty-five seconds (and this notwithstanding his claim that the duration of somnoform is seventy seconds). I will give the names of Drs. W. H. G. Logan and F. K. Ream as also being present and agreeing with me as to these statements of duration and action of the two anaesthetics.

Dr. Paden takes exception to the statement of Dr. Bullard that "it can not be given the second time without the patient becoming nauseated," and says that he can not be familiar with the administration of the anesthetic, although Dr. Bullard says that he has given it a great many times, and states, "In my own case after inhaling somnoform my feeling for forty-eight hours could be best described as like that resulting from the combination of tobacco and seasickness." There are also many other authorities which can be given to show that patients do become nauseated. Dr. Voyles, in his discussion of Dr. C. C. Miller's paper on "Somnoform," read before the Indiana State Dental Society, says: "I have seen some distressing things in the way of nausea from its use. I have had some cases that got dreadfully sick from the effect of it; I have had cases that went so far as

to produce vomiting, and I find that we are much more likely to have nausea than with nitrous oxide."

As to the misquotations: He refers to my discussion of Dr. Ritter's paper on page 1925 of the October issue of the *Dental Review*, and quotes me as saying, "Although I have lost five members of my family during the past two years from the effects of nitrous oxide, still I think nitrous oxide good enough for anybody." He puts quotation marks about this sentence, which would give some readers the impression that I made such a statement, when the fact is, I said nothing of the kind. It is up to him to change the impression he has given, giving his correction as much prominence as he did the original misstatement. Again, where he quotes me he has left out certain words in the sentence, as for instance: "To again quote Dr. Diamond: 'Nitrous oxide is good enough for anybody.'" Here he also cuts off the balance of the sentence as it should read: "Nitrous oxide is an anesthetic that is good enough for anybody, either physician or dentist, especially for short operation." (Which I shall prove later.) That sounds much better than cutting up the sentence and omitting part of it. He also leaves out punctuation marks and so misconstrues ideas that he found in the original article he quotes from. I do not see where he gets that privilege—not from the code of ethics, I am quite certain.

He gives a great list of fatalities occurring within the last two years from various anesthetics. But I can say, and I am sure everyone will agree, that he has given the strangest list of scientific authorities to show that these deaths have occurred; as for instance, the "*New York Sun*," "*The Morristown (Pa.) Herald*," etc. All of the five records of deaths from nitrous oxide, which he cites as occurring within the last two years, he quotes entirely from newspapers or the social column of a dental journal. The facts probably are that not one of these deaths occurred from pure nitrous oxide, but from some mixture like "vitalized air," chloroform administered with the gas, etc. The one death he acknowledges as having resulted from somnoform at Rockford, Ill., is the one authentic case he mentions. I will quote one of our dental friends at Rockford, who writes: "The anesthetic (somnoform) was given in an advertiser's office, the 'Hayes Dental Parlors.' It seems he gave it and broke the tooth; and when the woman revived she insisted upon his getting the root, so he gave

her the second dose, and she never came out of it. He claims to have used restoratives, etc. He was exonerated by the coroner's jury, but they went after him pretty hard." He says, "I had been using it up to that time, but if you mention somnoform here now you had better move out."

Another death which occurred February 22, 1907, at Grand Rapids, Mich., from the administration of somnoform is worth mentioning. I will quote the physician, Dr. W. H. White, who attended the patient and took her to the dentist's office. He said: "I examined her carefully and I saw no reason why the anesthetic should not be given; her heart was sound, seemed normal; pulse regular and strong. After the patient had prepared herself by loosening her clothes I proceeded to give the anesthetic, which was taken nicely, and without any apparent signs of danger. After the dentist had extracted six teeth, the patient began to show signs of regaining consciousness, but in a moment the pulse became weak, the pupils dilated and the patient commenced to have peculiar respiration—a long, blowing exhalation, and a short imperceptible inhalation.

"This condition remained for a moment when her heart seemed to be paralyzed and I could find no signs of heart beat or pulse, but the respiration continued from 60 to 90 seconds, then stopped at once.

"Everything possible was done to restore the patient, as dilating sphincters, hypodermics of strychnia, nitro-glycerine, inhalations of amylnitrate and artificial respiration."

There is much more that must be gone over and corrected in this paper of Dr. Paden's, but I feel that this is enough for one dose. I will try to give some more "facts" in the next issue.

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#### VENEERING VULCANITE PLATES.

Pack in the usual manner, open flask, and, if there should be all the rubber needed, take a sheet of the vulcanite used for veneer and stretch it until quite thin, and place it over the vulcanite in the flask, close flask, and vulcanize. This can be used to produce beneficial and beautiful vulcanite plates. To line a plate for instance with black rubber, it can be done by stretching a thin sheet of black rubber over the surface of the case, or by painting the plaster model with a solution of black rubber, then pack the flask and vulcanize.—*W. J. Robinson, Stomatologist.*



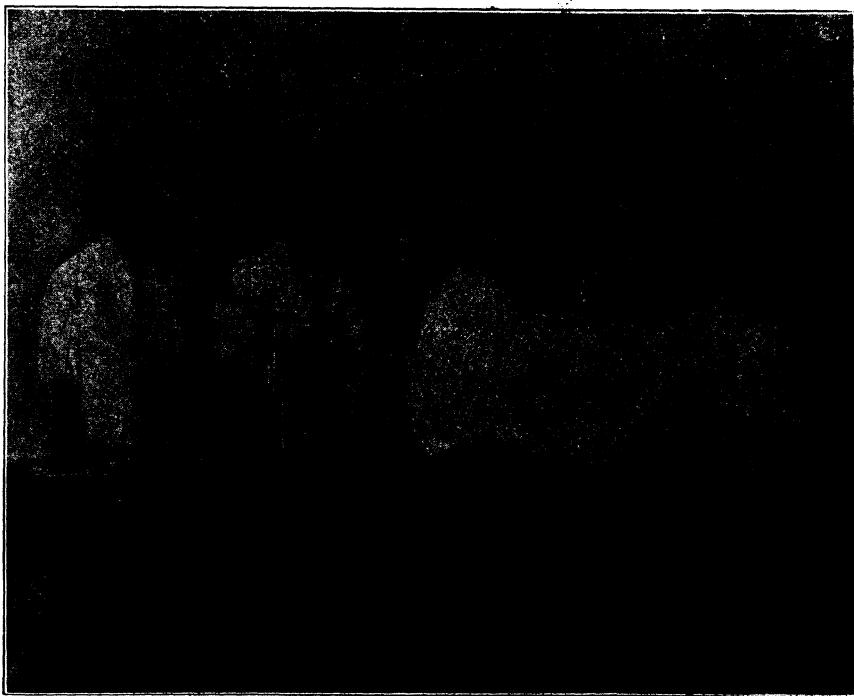
## ORIGINAL CONTRIBUTIONS.

### A COMPARATIVE STUDY OF THE PHYSIOLOGICAL ACTION OF ANESTHETICS.

BY C. M. PADEN, M. D., D. D. S., CHICAGO.

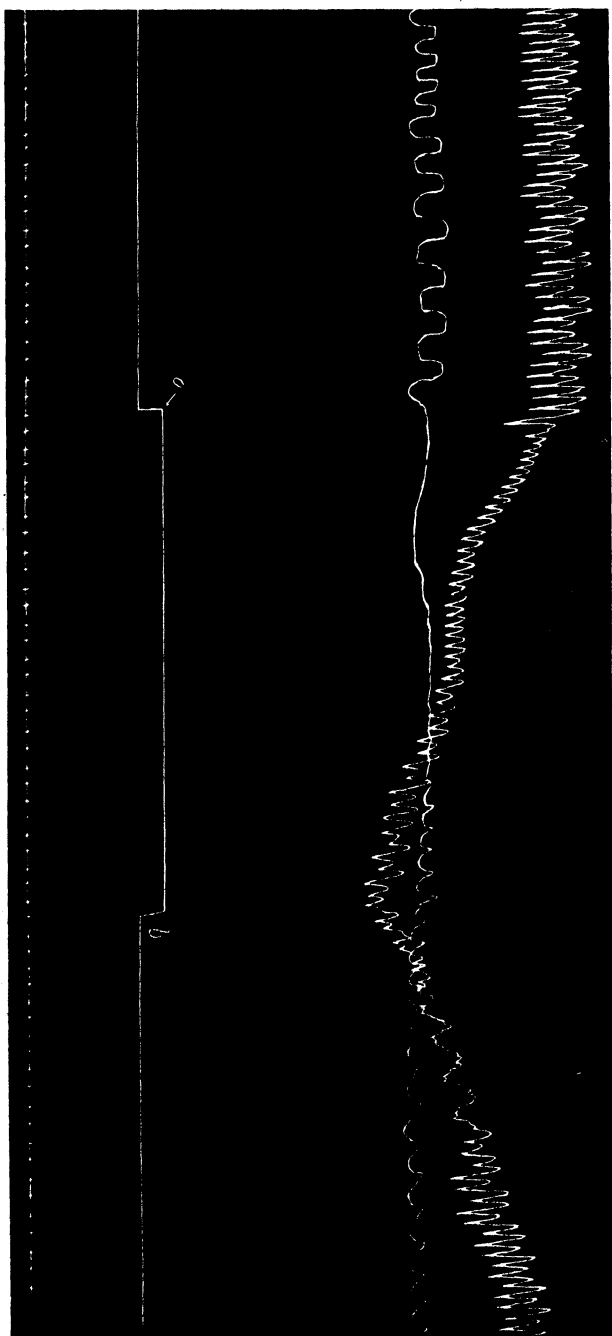
#### PART THREE.

The first record taken after we got the apparatus working to our satisfaction is of dog known as No. 2. To ascertain the normal pulse and respiration rates, three readings were made before anesthesia



No. 11.

was begun. As these showed little change, that made at 9:30 was taken as normal. It was, of course, impossible to get the normal blood pressure until after anesthesia made it possible to open the femoral artery and introduce a cannula. We found the normal pulse rate of



No. 10.

this dog to be 95 and the normal respiration rate 42. At 10 o'clock the administration of Somnoform was begun and the pulse quickened until it showed 144 beats per minute, while the respiration deepened and slowed down to 22. As all dogs were considerably excited, the pulse and respiration rates were doubtless higher than would have been the case had the dog been basking before a comfortable fire.

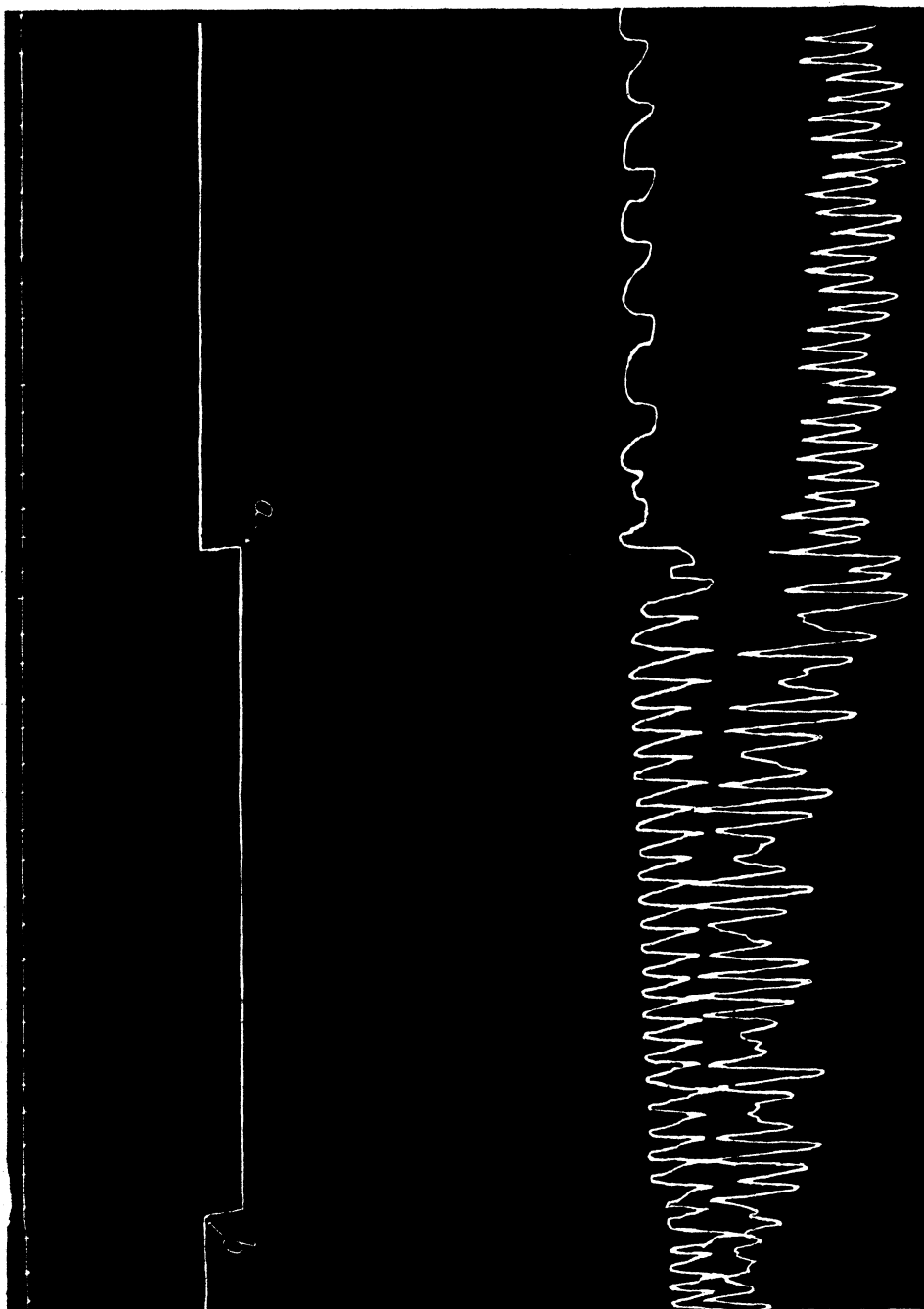
At the end of five minutes a change from Somnoform to ether was made, when the pulse became more accelerated, showing a rate of 160 beats per minute, while the breathing quickened to 30. Ether causes a rise in the pulse rate during the first and second stages, owing to the excitement and muscular exertion; in full anesthesia the pulse drops back to near normal. At the end of ten minutes of pure ether anesthesia the pulse had become extremely rapid and correspondingly shallower.

Having seen the effects of pure ether on this dog, we changed back to somnoform at 10:50, when the pulse rate immediately decreased, while the respirations returned to slightly less than normal.

At 11:05 we began to change from somnoform to chloroform and at 11:10 this change was complete. Chloroform anesthesia was continued until 11:25, when we returned to somnoform with the result that the heart actions became slower but stronger, the blood pressure returned toward normal and the respiration to 34. The dog had now been anesthetized for nearly an hour and a half with somnoform, ether and chloroform, and we discontinued this experiment, satisfied with the readings obtained. In a more condensed form they appear in the table below:

Time, A. M.	Pulse.	Blood Pres's're.	Respi- ration.	Remarks.
9:30	95	...	42	Normal.
10:00	144	150	22	Beginning record with somnoform.
10:05	144	150	22	Changing from somnoform to ether.
10:25	160	150	30	Deep anesthesia under somnoform and ether.
10:35	190	140	62	End of ten minutes under pure ether.
10:50	175	150	38	Somnoform anesthesia following ether.
11:05	154	150	66	Changing from somnoform to chloroform.
11:10	150	130	62	Somnoform discontinued.
11:15	148	90	28	End of five minutes under chloroform.
11:25	75	100	34	Back to somnoform anesthesia.

Dog No. 3 record is interesting principally because after an hour and fifteen minutes of anesthesia somnoform was pushed to the limit with little apparent effect. The normal pulse rate had



been 80 and the respiration 28. When somnoform was pushed the pulse registered 66 and the respiration 30. Below this they would not go. In five minutes after the somnoform was discontinued the animal showed a remarkable recovery, the pulse being rapid, the blood pressure high and the breathing good. Here is the record:

Time, A. M.	Pulse.	Blood Pres're.	Respi- ration.	Remarks.
10:00	80	...	28	Normal.
10:30	130	150	28	Somnoform anesthesia.
11:15	66	110	30	Pushing anesthetic to limit.
11:20	132	180	20	Recovery.
12:05	136	150	26	Changed from somnoform to ethyl chloride, to ether, to ethyl chloride, to chloroform, to somnoform.

Dog No. 5 was an excited pup and our best efforts to quiet him to a state where his pulse would be normal before beginning anesthesia were without avail. Owing to this excited state his normal pulse record, as we were compelled to take it, was very high—120. After thirty minutes under somnoform this pulse shows a rate of 93 beats, but is full and strong. This reading shows clearly that a rapid pulse does not necessarily mean a high blood pressure, or a slow pulse a low blood pressure, provided the slow pulse is full and strong. In fact, the slow, full pulse is better than the rapid, shallow one. At 11:05, after thirty-five minutes under somnoform and in a stage of deep anesthesia, the pulse is excellent, the blood pressure a little above normal and the respiration practically normal. It was now decided to make the experiments of cutting and stimulating the vagus and sciatic nerves, from whose actions records have been illustrated in these papers. In order to avoid the charge of "doctoring the records," that is, taking the best points from readings on different dogs to make a more favorable showing, all records were taken from this one dog.

Illustration No. 10 shows everything in readiness for a stimulation of the vagus.

Our record will have little value, however, if we do not accurately note the dog's condition just before stimulating the vagus. We find the pulse rate to be 98, blood pressure 180, respiration 28; these after deep anesthesia lasting about an hour and twenty minutes. In illustration No. 11, during the stimulation, which extended thirty sec-

onds, from "a" to "b," the pulse fell from 98 to 92; blood pressure fell from 180 to 100; and the respiration from 28 to 18. In twenty seconds after the stimulus was removed the blood pressure rose to 170 and the respiration to 36.

Stimulation of the central end of the left vagus at 11.16 causes marked slowing of pulse and fall in pressure and quite a startling change in respiration. If somnoform has depressed these centers they will recover but slowly if at all, and the next reading will show pretty clearly how much of a depression somnoform really is.

Under these conditions the speed of recovery shown by the center is surprising. At 11.18, two minutes after this depressing stimulation was applied, the pulse had gone up 100 beats, the blood pressure is practically normal again and the respiration is within four beats of the normal rate. Surely centers which act in this manner show no indication of being subject to the action of depressants. See illustration No. 9, sciatic stimulation.

At 11:36 the sciatic was stimulated and at 11:51 the central end of the vagus was again stimulated. The effects of both stimulations are shown in the table below, as well as the rapid return to what closely approximated a normal condition.

At 12 o'clock it was decided to force somnoform with intent to kill, but after ten minutes of this, during which time we used 90 c. c., the records showed a pulse of 144, blood pressure 140, or about normal, and respiration strong at 16. It was decided that the only way to kill this animal with somnoform was to shut off all air and asphyxiate him.

Time, A. M.	Pulse.	Blood Pres're.	Respi-ration.	Remarks.
10:30	120	...	28	Normal.
11:00	108	180	34	Thirty minutes after anesthesia.
11:05	97	170	26	Deep anesthesia, somnoform.
11:15	156	160	33	Left vagus cut.
11:16	77	160, 100, 120	6	Stimulation of left vagus, central.
11:18	177	155	24	Recovery.
11:35*	100	180	32	Before stimulation of sciatic.
11:36*	108	170, 150	72	During stimulation of sciatic.
11:38*	93	160, 170	34	After stimulation of sciatic.
11:50*	98	180	28	Before stimulation of vagus, central.
11:51*	92	180, 130, 100	18	During stimulation of vagus, central.
11:52*	96	170	36	After stimulation of vagus.
12:02	144	140	16	After forcing anesthetic with somnoform for ten minutes with intent to kill.

Dog No. 7 showed reactions which can be gathered from the following table. His nerve centers manifested the same activity after long anesthesia with somnoform and demonstrated that when the artificial stimuli were removed these centers were capable of rapid recovery and of maintaining the organic functions on which life depends.

Time, A. M.	Pulse.	Blood Pres're,	Respi- ration.	Remarks.
10:32	130	...	30	Normal.
10:52	128	160	28	Somnoform anesthesia.
11:07	111	180, 150	70	Stimulation of sciatic nerve.
11:26	52	180, 100	20	Peripheral vagus stimulation.
11:27	160	180	23	Following stimulation.
11:52	124	170, 130	12	Central vagus stimulation.

Eighteen dogs in all were anesthetized with somnoform for experimental purposes. Three of them died before the experiments were ended. The first death was due to the use of an imperfect respiration bottle which we had attached to the trachea. The second death was that of a vicious animal who made such efforts to bite us that we were compelled to tie his mouth shut. Some time after the administration began, he showed signs of collapse and the administration was stopped with the thought that he would revive as others had done. When we finally began efforts to revive him we found that we had waited too long. A post-mortem revealed that he had become nauseated and choked to death on the vomit.

The third and last dog dies partly as the result of carelessness during one of the last experiments. He collapsed and we tried to revive him by artificial respiration without the use of heart stimulants. The heart continued to beat several minutes after respiration ceased and it is probable that had we used heart stimulant in connection with the respiration, we should have succeeded in restoring him. This case serves as a warning to the writer that when a patient shows signs of collapse both artificial respiration and heart stimulants should be resorted to.

Between seventy-five and one hundred readings were made from the different experiments, but the professors selected the above as typical. So far as they have gone what do they seem to indicate?

First. That somnoform improperly administered may be unsuccessful or dangerous. Until we completed the inhaler which permitted us to administer it in an intelligent manner we had unsatis-

factory anesthesia, and with the defective respiration bottle on the trachea of one dog we asphyxiated him.

Second. That when properly administered somnoform stimulated the pulse and respiration but that the blood pressure does not seem to be much increased. The stimulation shown by the pulse and respiration returns toward normal. At no time does either pulse or respiration take on the shallow, ineffective character which fails to maintain the vital functions.

Third. That we could trace no depressant action by somnoform on the centers governing the pulse and respiration. When subjected to artificial stimulation, they act normally and when the stimulus is removed show great recuperative power.

That in the one case where we were able to induce collapse from deliberately pushing the anesthetic, the respiration failed first and gave time enough for the use of proper restoratives, had we chosen to employ them.

Fourth. That in other cases we were unable to kill by continuous administration of somnoform until we shut off the air and established a form of asphyxiation.

Our next paper will deal with the experiments made by the sphymograph and sphymomanometer.

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#### IMPRESSION FOR GOLD INLAY.

Let us suppose that we have a proximal cavity in a bicuspid, and a molar is adjoining it. I take an impression by bending a piece of metal at right angles, and in that I place the dental manufacturing modeling compound, because it is a low heat material. I press it to place and get an overflow. I then take it out of the cavity, chill with ice water, trim away the overflow, leaving one thirty-second of an inch that is not in contact with the margin, and place it into the cavity again. It will go in like an inlay. I now place a wedge in proximally, and, with pressure on the grinding surface, drop warm water on very slowly until I see it is yielding under the pressure, and then reset it. After chilling it and taking it out I have an impression which is as accurate as an inlay should be with no element of uncertainty as to whether the margins have been distorted or not.—*W. H. Taggart, Chicago, in Review.*





## ABSTRACTS AND SELECTIONS.

### JUST A LITTLE SOMETHING.

BY E. K. WEDELSTAEDT, D. D. S., ST. PAUL, MINN.

*Mr. President and Gentlemen:*

Jacksonville, in your state, is a very beautiful place, indeed, I may say that there is only one other place which compares with it in so far as this relates to the beauty of its trees, its picturesque situation, etc., and that is Fredonia, N. Y., where that prince of men, Dr. Rathbun lives. Years ago, there lived in Jacksonville, a surgeon named Prince. He was a man of more than ordinary ability in his profession. He had as his assistant, Dr. G. V. Black, now the dean of this dental school.

Dr. Prince has long since gone to his final reward, while Dr. Black still remains, and is everywhere recognized as the most renowned and celebrated man in his profession. Dr. Black's friends, who feel that they know him best, recognize him as one of the deepest scientific thinkers of the present generation. During the last fifty years, he has been a perfect demon for work. It has not been an infrequent thing for him to labor for thirty-six or forty-eight hours. For years he has turned night into day, for the days, to him, have been far too short in which to do what he wished. For years and years, provided that he was well, a bed has never held him for four consecutive hours. The long years of never ceasing toil have not told upon him as they would upon other men. You and I shall never know of his desire to do still more for us, and those who will come after us. You, gentlemen, and a handful of others, understand somewhat the magnitude of the work which this great man has done for the professions of dentistry and medicine as well as for science, art, etc.

Today humanity in general is worshiping mammon; therefore, the results of the work of this famous man are not being applied, nor are they being made such use of as they should be. Twenty-five years from now the man's work will begin to be appreciated; twenty-

five years from now, let us hope that greater attention will be paid to other things than money.

Let us hope that science will have her day just as mammon is holding sway at present.

I drop my mite of praise into the almost empty caldron which later on will receive the plaudits of the multitude. I do this in grateful remembrance of the many delightful and profitable hours spent in close communion and study with this dearly beloved man while he was still in practice at Jacksonville. I am wholly indebted to this great man for the little which I know. Today, I am honored as never before, for I stand where he so often has stood, and I trust that for years to come he may stand and interest his listeners as he expounds his progressive, advanced and enlightened ideas.

I come to you today with some ideas to which Dr. Black has called attention. I believe that there are many things which it is impossible to make so plain that they may be entirely grasped by some men in our profession. Therefore, I crave your kind indulgence while I try to interest you in the proximal surfaces of two upper second bicuspid. These teeth lie before me, and I should like to say something about them. One of them has been filled with gold. The other is decayed, but a breach has not taken place; none of the enamel rods have fallen out. Let us look at the filled tooth first. The disto-occlusal surface contains a gold filling which is just one-third as broad as that surface. To the lingual, buccal and gingival of the gold, are cavities of decay. Beyond the cavities of decay the lime salts have been dissolved from the enamel gingivally to the gum line, buccally to the angle of the tooth, and not quite so far lingually, backward decay has already set in.

Looking at the case reminds me of a little story in which we are all interested. Let me tell it to you. Years ago, Dr. Prince removed a cancer. Dr. Black assisted him. When the operation was completed, Dr. Black took the cancerous growth which had been removed, to his laboratory and examined it. Each time he went over it, he came to a place where a break had taken place. A few days later he met Dr. Prince, and in speaking about the case, said: "That cancer will return." Dr. Prince looked at him and said that he was crazy.

Seven months went by when Dr. Prince met Dr. Black and he asked: "Dr. Black, do you remember that cancer operation?"

Dr. Black answered: "Oh, yes."

Dr. Prince: "Will you mind assisting me to operate on that case again today? That cancer did return. How the devil did you know that it would?"

Then Dr. Black gave him his reasons.

We see in the teeth of many people who consult us, operations in the proximal surfaces of bicuspid and molars which are very similar to the one made in this bicuspid, and we know precisely what is going to take place. Know it just as Dr. Black knew, when he came to the break in the cancerous growth, that the cancer would again grow from the part that was left.

Where we see these fillings occupying but one-third of the proximal surface we at once know that the central nidus extends over the filling and on to the tooth.

This term nidus is a new one in its application to caries which will be much used in the time to come, therefore I should like you to have a good understanding of what is meant by it.

"*Nidus*." First—a nest, the nest, case or cell formed by an insect or a spider for the reception of its eggs.

Second—A place or point in a living organism where a germ, whether proper or foreign to the organism normal or morbid, may find means for development.

Whenever we are making operations in the proximal surfaces of the human teeth, we should look over the surfaces and see to it that the cavity margins are in such positions that extensions of the nidus will be entirely on the filling and not lap over and cover both filling and cavity margins. For, just as certain as it does do this, we shall have recurrence of the disease.

In making all operations in the proximal surfaces, the position the nidus will occupy must be considered. It is for this very reason that for years and years Dr. Black has asked the members of the dental profession to study these cases of recurrent decay, and in making operations in the proximal surfaces, to have the cavity margins extend far enough lingually, buccally and gingivally so that the spreading from the nidus will be wholly upon the filling and not overlapping the cavity margins. A person has but to use a pointed stick with some pumice and repolish the fillings which have been made in the proximal surfaces to ascertain whether or not there is a nidus covering the filling.

But I am confining my remarks entirely to this bicuspid with

the gold filling in it, and not saying anything about the conditions as they exist in the distal surface of the other tooth.

Let us examine this surface a little more carefully than usual and what do we find? That the facet closely approximates a surface wear; that we have to the gingival, lingual and buccal of the facet, a white area which is indicative of what the acids of decay have done. This whitened area extends linguo-buccally across the surface. It extends nearer to the disto-buccal angle of the tooth than it does toward the disto-lingual angle. This is on account of the form of the distal surface of the second bicuspid.

This whitened surface shows us to what an extent the acids have involved the enamel. It tells this story: "Here is the area of liability to decay. If, in cutting the cavity you do not include within your margins the territory I have marked out for your guidance, later on I shall continue my work of destruction, just the same as if you had not made the operation. I shall do this for you, if you leave on that surface any of this whitened area as you see it now. I shall do this, because you have not made an alteration in the conditions. You have left the conditions precisely as you found them before you made the operation."

Just as a surgeon, who, finding a condition of necrosis existing at the elbow joint decided to operate. "If, in making the operation he leaves necrosed bone *in situ*, he has only half made his operation; later on, he or somebody else, must operate again upon that part." That is the story that the condition tells us.

Surgeons of intelligence and ability value their reputation; thus they always cut beyond the diseased territory, and operate in so far as possible, in tissue which is in the best condition of health possible to obtain. They have set us an example which, if we would follow, it would be well for our patients and the reputation of the men comprising our profession.

Let us compare the conditions in the distal surface of one tooth with the conditions existing in the distal surface of the other tooth. The only difference which exists is that one of the teeth has a gold filling in that surface. The whitened surface extends lingually, buccally and gingivally from the filling just as in the similar surface of the other tooth, it extends from the facet. Nature points out the way for us to follow, so far as this relates to these two surfaces under consideration and all other similar surfaces. The moment we violate the

laws of nature, that moment we are laying up trouble for somebody. It is a great pity that so far as we are concerned the trouble is not more often made for ourselves, instead of those for whom we operate. If we would take some of the extracted teeth which are to be found in many offices, and make a careful study of the form of the proximal surfaces, of the facets, of the beginning of decay of the enamel, observing where a breach of the enamel first occurs, noting carefully and making mental photographs of the forms which naturally invite decay, etc., and then when we are making operations upon the proximal surfaces, apply the knowledge thus obtained, why I feel that we should shortly reduce the number of failures, we are at present observing, by at least 80 per cent.

Remember that we invite failure if we leave *in situ* the very elements which, originally, caused decay to take place in that special locality. Remember that each time we make a point of contact that there will be, rootwise of that point of contact, a nidus.

The form given the fillings which are made in the proximal surface and the position of the point of contact, have much to do with preventing the recurrence of decay. These different things we should carefully consider and study. And I am unable to impress upon your minds how necessary and how important it is for us to do these very things. Their study is altogether too greatly neglected.

Too many men feel that the main thing is to fill the cavity and get rid of the patient. What form is given the filling, the position of the point of contact, etc., do not seem to enter the minds of as many practitioners as it should. Too often we hear the remark made: "I never separate teeth prior to operating upon the proximal surfaces." This is not right. We are not here to fill all the teeth possible, irrespective of how the operations are made. In this particular, reputable surgeons once again set us a most excellent example to follow, for they do not try to make as many surgical operations as possible, irrespective of how they are made. No, they try to make their operations as perfect as they can be made. They do not operate until they have the conditions as they wish them. In every essential particular they demand certain things and they will not operate upon unclean parts with unclean hands and instruments. The old argument that the patient does not know what we are doing, and that it is impossible to make a five-dollar operation when the patient will pay but one dollar, is not considered by any decent nor self-respecting man. Just let me stop, and tell you another story.

A dozen years or so ago I stood beside a dental chair and watched an operator while making a gold filling in the mesio-occlusal surface of an upper left first molar. Everything about the cavity preparation, placing and condensing of the gold, trimming the filling to form and polishing it, was as perfect as man could make it. When the patient left the chair, she said: "Doctor, what is my bill?" The man answered: "Eight dollars." The patient paid the bill, put on her coat and hat and left the office.

I was under many obligations to this man, but that did not prevent me from expressing my opinion, and in a language which could not be misunderstood. When I had finished, the man walked up and down his office a few times, and then came up to where I was standing and said: "Those eight dollars were more to that poor girl than twenty dollars are to many of my patients. Remember one thing, 'the poor ye have with you always.'"

The man's name you wish? You all know him, and he might not thank me for stating it.

The lesson to be learned from this story is this—if a thing is worth doing, do it well or do not do it.

If we are making operations in the proximal surfaces, let us at least try to return the parts to as near their normal condition as is possible, or else let us send the patient to somebody who has the ability to do this.

Recently a very beautiful young woman consulted me regarding a cavity of decay in the buccal surface of an upper right first molar. The young lady's home was in San Francisco. After making an examination of the tooth, an appointment was made which the young woman kept, and the tooth was filled. After the operation was completed, she asked me if I would kindly tell her in what condition I found the rest of her teeth. There were thirty-seven operations which had been made in the proximal surfaces of her teeth, and I found cavities of decay beside each of these fillings. She was desirous of knowing the condition of her teeth, and I was just as desirous that she obtain this knowledge from somebody else. My reason for this was on account of what she said of the man who had filled the teeth. She "knew" that there was nothing wrong with the fillings, and I knew so also, but there was a whole lot wrong with the teeth. Besides, she was going to stay in St. Paul about a week, and that was not sufficient time in which to make all those operations. I merely

said to her: "I suggest that you consult your dentist on your return home."

Now here were thirty-seven fillings which had been made in the proximal surfaces and none of the cavities had been prepared more than one-third as broad as the tooth was thick, linguo-buccally. The operations had been divinely made, but the operator had showed too much mercy for the micro-organisms. He evidently felt that they must be nourished, and I just wish to assure you, gentlemen, that he made conditions that would quickly fatten them.

In making all these operations had this good man made just three more cuts with a hatchet excavator on the cavity margins, he would have placed them in position where decay could not have taken place. If this were all that these three cuts would have done I would not say a word. Just think, if he had made these three cuts how much more rapidly he might have operated. Just think how convenient it would have been for him to have prepared his cavity, have placed his gold, condensed his gold, to have trimmed the completed filling to form and to have polished it. But no, somebody else must do all this for the poor girl, and she may spend hundreds of dollars more, and, perhaps, upon a number of occasions, before she finally obtains that which she should have obtained originally. Making operations of this kind may be doing good, and being kind to the micro-organisms, but it is not what should be done for humanity. The man who made these operations is a man whom we all know and we are all very fond of him. I make too many mistakes to allow myself to criticize operations made by others, but really, gentlemen, I do feel greatly humiliated when I look at the operations made in the teeth of this young woman, and am told that all of these were made in 1904. I hardly think that any of us would care to pay so much money for such operations.

No man has a right to remain in any profession or any calling who has just one object in view, and that object—obtaining what money he can out of others. The best there is in a person is not brought out, if money is the goal. If there can be no display of heart in what is being done, I fear that there is not very much pleasure for the man who operates.

We are all followers of the mighty Black. Too many men believe things about us which their imagination leads them to believe are true. In preparing cavities, we do not believe in deliberately

destroying the human teeth. Preparing cavities, according to the Black method, does not mean, nor has it ever meant, the ruthless destruction of tooth substance. Let us all go from here and not only preach this gospel, but follow it in our every-day operations. By doing this, we know full well that we have much satisfaction in the knowledge that we are serving humanity in the best way possible. All this for the greater glory and honor of him whom we revere, thus honoring him by increasing the reputation of the dental profession and prolonging the usefulness of the human teeth.—*North-western Dental Journal*.

### SOMNOFORM IN AUSTRALIA.

MELBOURNE, AUSTRALIA, January 1, 1907.

Dr. C. M. Paden, Chicago.

DEAR SIR:—Yours of date November 8th duly reached me and I am only too pleased to supply any information I can on the subject of "Somnoform Anæsthesia." I have perused your first article and my own experiences fully coincide with all you state in your paper.

I have used Somnoform now for over two years to the entire exclusion of nitrous oxide, and am delighted with the results obtained, and only use nitrous oxide now when patients specially desire it.

I have used Somnoform in over 3,000 cases personally and have never had an anxious moment in a single case.

I have given it to all and sundry, as I consider it safer than nitrous oxide, and in bad heart cases I find it the best anesthetic I can possibly use.

I took it up here in the face of tremendous opposition on the part of doctors and dentists, but persevered carefully and now many are interested in it who were at first strongly adverse to its use. I have not heard of a single fatality out here in Australia, though its use is now very general, and in many cases is in the hands of totally inexperienced dentists. I have made careful inquiries as to fatalities in European countries, but though six or seven cases are on record in England, in no case can I find that Somnoform was blamed at the inquests, and in most cases it was ethyl chloride, not Somnoform, that was used.

I can never understand how educated men, right up in the medical or dental professions, can not see a difference in the effects of



ethyl chloride alone and Somnoform, a mixture, on the human body when they well know that combination of two or more drugs can so easily produce effects entirely different from those produced by the respective drugs when used alone. However, as time goes on and provided the use of Somnoform is not harassed by accidents due to ignorance and inexperience, I feel assured we who are so interested in this anesthetic have nothing to fear as to its general use in the future.

Inclosed please find copies of papers I have written here and one written by one of my pupils after some months' experience with Somnoform in general private practice. Wishing you every success and looking forward to receiving a copy of your second article,

Yours very sincerely,

W. ORR GRAY.

120 Collins Street.

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REPORT ON THE PROGRESS OF DENTAL HYGIENE IN  
GRAT BRITAIN GIVEN AT THE MEETING OF  
THE F. D. I. IN GENEVA.

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BY FREDERICK J. TURNBULL L. R. C. P. & S. E., L. D. S. OF EDINBURGH.

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Though there is still considerable room for improvement much has been done in this country during recent years to educate the masses in regard to the proper value and care of the teeth. Various influences have been at work to bring about this.

Generally speaking it may be said that Dental Supervision is making headway in public schools, benevolent institutions and poor that of the British Dental Association which has already been dis-

It is now some years since the British Dental Association appointed a committee to inquire into the state of the teeth of school children in England. A very exhaustive report was the result of this commission which found from the inquiry that the teeth of school children were much in need of attention.

The B. D. A. set about to try and alleviate this state of affairs. The inquiry in itself certainly brought before the heads of schools that dental attention was not only desirable but necessary.

In addition to this, the B. D. A. have printed a booklet for distribution amongst the masses, in order that they might appreciate the value and care of their teeth.

Recently the B. D. A. have interested themselves in a deputation from the British Medical Association which waited upon Mr. Birrell, Minister of Education to point out the necessity of conducting a medical examination on government and poor law school children at least twice a year. This medical examination would of course include a dental examination. They have thus shown the Government through Mr. Birrell that in bringing forward a bill for compulsory education it is also its duty to attend to the medical and dental health of the children.

The House of Commons have approved of the principle of medical examination of school children so that it only remains to erect the machinery to carry out the work.

Having thus proved the necessity of dental examination of school children it now remains to decide by what means and at whose expense the treatment will be carried out.

Dental hospitals which already exist may supply the demand in the larger cities but the probability is that the work will be done in the country districts by private practitioners at the public expense.

In regard to dental literature for the masses several small pamphlets have been produced for circulation. Principal among these is that of the British Dental Association which has already been distributed to the Medical Officers of Health and Boards of Guardians of all poor law charity and industrial schools in England. Similar booklets have been brought out for the same purpose by the Royal Dental Hospital of London and the School Dentist's Society. These are more or less on the lines of the B. D. A. booklet which has been written in popular language so that the more uneducated people may readily understand the phraseology. These pamphlets are on the care of the teeth with more special reference to the causes and prevention of decay pointing out the necessity of the careful cleansing of the teeth, etc.

Since the introduction of school inspection by the B. D. A. much has been done by the School Dentist's Society by whose efforts over fifty dentists have been appointed to the Unions and district schools in *England* with the sanction of the Local Government Board.

These dentists devote one or more hours a week, according to number of scholars, to the filling and extracting when necessary of the children's teeth, the aim being to see each child twice a year.

The salaries vary from £20 to £100, according to the size of the school and the state of its finances.

The society meets regularly for the discussion and dissemination of ideas in connection with public school dentistry. It has also done much to forward the cause of dental hygiene by producing diagrams to illustrate the teaching of that subject in schools, etc.

It has also brought out a pamphlet on the care of the teeth for distribution amongst teachers and others. All this has done and is doing much excellent work in preserving the teeth of poor children and in training them to esteem them at their proper value.

Practically nothing has been done as yet in regard to Elementary schools which have a population of about six millions.

Scotland as yet is not so advanced in the way of dental supervision in schools as England.

A few industrial and charity schools have appointed dental surgeons. The B. D. A. pamphlet on the preservation of the teeth is being distributed to all medical officers of health, and teachers in state and charity schools.

In the larger towns both in England, Scotland, and Ireland, much good is being done by the teaching staffs and students of the dental hospitals, and dental departments of general hospitals and dispensaries, both in the way of dental treatment and dental instruction.

Much good might be done by introducing lessons on the care of the teeth into the reading books of children. This will no doubt be done in the near future, as will also the teaching of medical and dental hygiene in Government and charity, as well as other schools.

At present anything done in this way is voluntary and initiated by the personal zeal of individual teachers and others, but the teaching of Dental Hygiene in schools, and the inclusion of popular articles on the care of the teeth in the reading books or writing books of children of all ages, will, we hope, become general.

#### ARMY AND NAVY DENTAL SURGEONS.

Within the last year or two, dental surgeons have been appointed to the British Army and Navy. This has been due principally to agitation by the British Dental Association. As yet it is an experimental stage, but as the services are adding from time to time to the number of dental surgeons it is reasonable to suppose that the gov-

ernment is appreciating the value of their services in improving the efficiency of the forces.

At present there are nine army dental surgeons.

These are appointed to different districts or depots. They hold civil rank and are remunerated at the rate of £1 per day, i. e. £365 per annum plus traveling expenses.

The period of engagement is for one year at a time and all necessary dental appliances are provided at public expense. They are required to devote their whole time to army duty.

Just recently the Director General of the British Army Medical Service has issued a booklet on hygiene for distribution amongst the soldiers. It includes instruction on the care of the teeth.

In regard to the navy the regulations are somewhat similar. There are at present four dental surgeons employed at the principal home ports for shore service only. These appointments are for one year, renewable up to five years, and the holders retain their civilian status. Their remuneration is £1 a day inclusive, their whole time being given to the public service. Instruments, etc., are provided at the public expense.

#### FACTORIES UNDER STATE INSPECTION.

There are at present twelve lucifer match works in the United Kingdom, which are under state inspection.

These have their own dentists attached to them, the salary being a matter of arrangement between the dentists and the occupiers of the works.

The appointments are subject to the approval of the Chief Inspector, and there are rules drawn up to be observed by the dentist and the work people.

The work people may be temporarily suspended, or entirely excluded from working in phosphorous factories when they are suffering from certain conditions of their teeth.

In conclusion, gentlemen, I must tender my apologies for the meagre nature of this report but I was only asked at the last moment to gather the information and prepare a short report.—*Proceedings of F. D. I., Published by Paul Guy, Assistant Secretary.*

## ABSTRACTS AND SELECTIONS.

### REPORT TO THE COMMISSION OF HYGIENE AND PUBLIC DENTAL SERVICE OF THE INTERNATIONAL DENTAL FEDERATION CONCERNING SWEDEN.

BY DR. ELOF FORBERG, OF STOCKHOLM.

In an article in which I invited the Swedish dentists to take part in the collective investigation, as to the condition of the teeth of the school children in our country<sup>1</sup> (arranged by the Swedish Dental Society). I had reason to point out that Sweden, as far as general hygiene was concerned, held a very advanced position, that there was, however, a department of hygiene the extraordinary weight and importance of which had been almost perfectly neglected, viz: dental hygiene.

After that time, yet, the circumstances have brightened.

By these investigations in schools throughout the whole country it was demonstrated that only a few per cent of the 17,000 children who were examined had sound teeth. This sad fact was of course in a high degree fitted to awake the attention to the serious risks for the growing generation that are brought about by the dental caries and its sequelæ.

That something must be done against this popular disease they began by and by to conceive.

One result of these investigations I deem proper in few words to mention here, although it, strictly taken, lays outside of this report, as it is of great hygienic importance for our schools. In order to try to find out in which degree certain constitutional diseases and the infectious diseases, which generally attack the children in their earlier years, affect the development of the teeth, our investigations were arranged in connection with examinations by physicians as to the general state of health of the children. The experience that hereby was made, concerning the hygiene in the schools, caused the authorities to appoint school physicians to the common schools. In the graded schools and in the colleges such physicians had long before been employed.

In this report I am not going to speak about the scientific results

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<sup>1</sup> Published in the *Scandinavian Dental Journal*, 1896.

of our above-mentioned investigations<sup>2</sup>; the results they gave regarding the hygiene, on the other hand, merit to be mentioned here as they seem to have opened the eyes of the public as well as of the authorities.

In order to promote this movement the Swedish Dental Society organized courses of lecture especially for school children, their parents and teachers. Moreover the Swedish Dental Society invited the dentists all over the world to partake in an international competition about a popular tract or booklet: "On the teeth and their hygiene," intended to be distributed in the schools and among the people. The society had granted 1,000 crowns (about 1,400 frs.) to two prizes.

The prize-jury awarded the first prize to Dr. C. Röse of Dresden and the second to Mr. Rune of Karlstad, Sweden.

Even in the Swedish Parliament our hygiene question has been brought under discussion.

A member of parliament, Mr. Wawrinsky, whom we had made interested in our work, brought in a bill during the session 1904-1905. In his bill Mr. W. mentions our school investigations; he quotes in detail my reports on the subject, gives an account of the Commission of Hygiene of the F. D. I. and its work and, after an explicit argumentation, he demands: "That the Parliament would write to the King and request that his Majesty be pleased, through appointed experts, to investigate (a) the causes of the great spreading of the dental caries amongst the population, and how it shall effectively be prevented; (b) how a regular and systematical investigation and care of the teeth of the school children may be provided for; (c) how such investigation and care may be bestowed on the conscripts belonging to the army and the navy."

This bill fell through (as might have been expected of this first effort) but its principal aim—to attract the attention of the importance of the question—was reached.

At the session 1905-1906, Mr. Wawrinsky brought in a bill again which resulted in a writing from the Parliament to the King demanding "that the Government might take such measures that the instruction in hygiene in our public schools may be better looked after than has hitherto been the case."

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<sup>2</sup> We refer to: Förberg; Etude sur les dents des enfants dans les écoles de Suède, Communication au 3me Congrès dentaire international, Paris, 1900.

At the hygienic exposition, that was recently opened in Stockholm, the Odont. society has made an exhibition showing statistically the spread of the dental caries and the importance for the national economy of its consequences.

The newspapers have made mention of the aforesaid incidents in long articles, wherein the weight and urgency of the question has been pointed out.

By this is seen that we have tried in every way to call public attention to and get co-workers for our work.

As to what has been done for the public dental service I beg to state the following:

In Stockholm we have, since some decades, two dental polyclinics—one at the dental institute of the university and the other municipal—at which the poor receive treatment free of charge.

The Hygiene Committee of the Swedish Dental Society has entered into negotiations with the Superior Board of Managers of the common schools about the establishment of a dental polyclinic for the school children. We have fair hopes that these negotiations will soon lead to a desired result.

The Committee has further succeeded in obtaining from the Government and the Parliament permission for the dental students to postpone the term they have to serve in the army or navy, till after they have passed their dental examination and receive their diploma.

We believe that they, when they treat the teeth of their comrades, shall be able to serve the country just as much, as had been the case, if they had, for instance, trained to the gun. Hitherto the army surgeons have been performing the most necessary dental operations, how and with what result I need not tell here.

At the Military Hospital of Stockholm a dental polyclinic is going to be established with a dentist as manager.

The children at the Freemasons' Hospital receive free dental treatment by a dentist, M. Olivenbaum, who is attached at the Hospital.

Another dentist, Mr. Sturle, is employed at the Blind School in order to treat the teeth of the children there.

One of our greatest manufacturing companies, Separator, has organized a dental polyclinic for its workmen and their families. Chief Dental Surgeon Mr. Senhardtson.

The Dental Society of Gothenbourg has also appointed a permanent committee on hygiene. Under leading of its energetic chairman, Mr. Bensow, the committee has succeeded in getting a yearly subvention from the school board.

The committee arranges for that, courses of lectures in dental hygiene for the school teachers.

Tooth brushes are distributed, gratuitously, to the children in the first class of three schools. This free distribution of brushes is going to be continued during four years. When the children, then, are about to finish school, a comparison is to be made between their teeth and those of the other children. Further: the teeth of the children in one class have been under observation and conservative treatment for three years. This treatment will also be continued until the children of that class are to leave school. Through a comparison with another class of the same age, the children of which have *not* received such dental treatment, it is hoped that the authorities shall find such treatment indispensable in the schools. To all the school children printed directions as to the use of the tooth brush, etc. are distributed. Dr. Bensow has also made a very interesting statistical investigation of the teeth of 2,000 school children.

In Köping a dentist, Mr. Sultrap, has made an agreement with the school board about examination and conservative treatment of the teeth of the school children at a very low fee.

In Malmö the polyclinic for children has a dental department directed by a dentist, Mr. Gilck, where poor children are treated free of charge.

In several other cities as f. i. Falun, Hedemora, etc., the school children likewise get free dental treatment.

From what has been said above we conclude that the interest for dental hygiene has been roused among all classes of society.

The Swedish Dental Society deserves an honorable mention for its work in this direction. Our highest authority has also shown its appreciation hereof. When the society, namely, presented a petition to the Government (asking that the writer of this report might be designated as the official delegate of Sweden to the F. D. I. meeting in Madrid) the Government sanctioned this *as an official acknowledgement from the side of the Government of the meritorious work of the society.*

If, thus, our country does not stand in the forerank as far as



Dental Hygiene and Public Dental Service is concerned, yet we have great hopes on the future.—“La vérité est en marche!”—*Proceeding of F. D. I., Published by Paul Guy, Assistant Secretary.*

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## THE EVOLUTION OF THE “INLAY” IN DENTISTRY.

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BY F. W. MACDONALD, D. D. S.

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To trace the evolution of the “inlay” as we find it in the practice of dentistry today, although laborious, is to say the least interesting as well as instructive. One is taken back to the early years of operative dentistry, and though it is only in the very recent years we find the perfected inlay, yet in the very infancy of the art of dentistry we see traces here and there of the development and application of this principle of inlaying, which, I believe, is to revolutionize the present methods of filling teeth.

It is not strange that this principle of inlaying should occur to those men years ago, for it was one of the most ancient of arts and it had been brought well-nigh perfection. The thought of restoring broken surfaces in teeth, as was being done in gold and wood was ever present with them. Conditions they knew were vastly different, but they felt with a prophetic instinct that sometime and somewhere these obstacles would be removed—difficulties apparently unsurmountable would be overcome and the principle of inlaying teeth would become recognized as good practice in restoring broken down tooth tissue. First of all the problem that confronted them was that of getting a suitable material which would resemble the tooth tissue in color to a degree, and that would withstand any chemical action in the mouth. In 1820, Dr. Dinderer began the practice of using animals' teeth, grinding them down to fit the cavity, depending on the swelling of the material under moisture to make it fit accurately enough to be retained; but this method was discarded owing to the fact that these inlays soon become very much discolored, and thus the main object was defeated. From that time until 1837, practically nothing had been recorded showing the discovery of any new material. In that year, however, Doctor Murphy, of London, reported using glass in labial cavities.

In 1862 Doctor B. Wood presented an article entitled, “Enamel-

ing Plugs and Restoring the Contour of Defective Teeth by the Application of Enamelled Caps." He says: "The design of the improvement is to restore the form and beauty of decayed and broken teeth, at the same time preserving as much of the healthy dentine, and concealing the metallic plugs by means of a cap or covering resembling the sound parts of the teeth. \* \* \* These caps are from the size of a medium sized plug to that of the entire crown of the tooth. They are made according to circumstances, with grooves, slots, cavities, orifices, serrations and with asperities made by means of platina scraps at the basis in order to retain the filling. \* \* \* I have assumed the plastic metallic filling is the material to be used for engrafting the cap to the natural base, but it will occur that any plastic material with sufficient tenacity and otherwise suitable to the purpose could be used."

Establishing the originality of certain constructions of processes is made difficult owing to the fact that articles in the earlier days of dental journalism were not so elaborately illustrated as at the present time, and consequently we can depend only on the text. In the papers I have taken extracts from there can be no misinterpretation as to what is meant, so we may safely say that in these men we haven't the pioneers of the "inlay" in dentistry.

Doctors Linderer, Volck and Maynard endeavored to place materials in a cavity by grinding them down to fit the cavity as accurately as possible. They endeavored to get a material that resembled the natural tooth. The esthetic value of the inlay is what appealed greatly to them. They did not consider the fact that their method would save the tooth better than any other method for there is no doubt that it would not, but they were willing to sacrifice the permanency of the inlay for the improved appearance. Doctor Wood does not explain his method, but simply gives us a view of his completed work. How he attained these results we are not sure, but from the text he had some measurement which allowed him to do such work as he outlines. He is the first one to record the use of a plastic mass in setting plugs or inlays and caps and also the first one to suggest the roughening of the under surface of the inlay to make it the more secure in its attachment. He not only is the originator of the metal plug or inlay but he is the first one recorded who suggested the enameling of the outer surface of the plug or inlay as well as the metallic cap for badly broken down teeth. This to my mind is nothing

more or less than the basis for our porcelain jacket crown. True there have been many modifications of his method since—changes in method of construction every year, but the fact stands that according to records in dental journals—though not in the United States Patent Gazette, here is the man whom the dental profession is indebted for blazing the way in this branch of dental art. Following closely upon Dr. Wood's paper, Doctor Starr, in 1870, reports having had porcelain pieces in which pins were fused for the purpose of retention and Doctor Weagant had instruments constructed which would cut the cavity to correspond to the same sized piece of porcelain. In 1876, Doctor E. A. Bogue, is reported as saying, "Doctor Williams, of Boston, sent me two or three little toadstools in shape requesting that I exhibit them. They are the device of Doctor Fisk, I think of Massachusetts, who has used them in filling teeth with gutta percha, then warming the gold and pressing it home. The gold is somewhat the shape of an umbrella, the tent of the umbrella being shaped as the surface of a large gold filling would be, so that you have a gutta percha filling and a gold cap as a protector to the gutta percha. The gold is retained by a pivot, pin or post which was previously attached to its under surface and which engages with the plastic material.

From this time on modifications of the methods previously mentioned were recorded every year. M. H. Webb, in November and December number of the Dental Cosmos, of 1879, and in the May number of 1883, Doctor S. D. Rambo, in the Dental Cosmos of 1882, Doctor C. H. Land, Patent Gazette, December, 1887, and A. H. Thompson in the Western Dental Journal of May, 1888, all record original modifications.

Doctor C. H. Land's patent covering the method of burnishing ribbon platinum into the cavity, making a matrix the same form as the cavity and fusing porcelain in it with the aid of a gas furnace was executed in December, 1887. It undoubtedly was distinctly different from any other method recorded up till that time as far as we can determine, and it is this method, with modification, that is largely used in practice today in making porcelain inlays.

Doctor W. H. Jackson, of Ann Arbor, as early as 1881, used gold inlays for the purpose of restoring contours which is practically the same method as is in use today. In fact Doctor Jackson can well

lay claim, as far as record goes, to the devising of the method of burnishing metal into cavities, in order to get a metallic matrix; and while Doctor Lan's patent technically gives him the credit, yet the principle of the method involved is the same as that of Doctor Jackson. His method is that of burnishing thin gold in to the prepared cavity, and after outlining the cavity, filling up with solder to the required contour, and cementing the soldered piece into the cavity.

In Dental Cosmos of 1891, page 79, Doctor Swasey gave his method of making gold inlays. He first fills all the under cuts with wax and take impression in modelling compounds. Plaster model is then run and Melottes metal die is stuck and pure gold plate of 50 gauge is swaged and final burnishing is made in the cavity. The matrix is invested and 20 K. gold is fused in it in small pieces. Doctor G. V. I. Brown, in Cosmos of 1893, records his method of making a hollow gold inlay by filling cavity one-third full of wax before taking impression. In the same volume, page 196, Doctor Alexander records a method very similar to one being exploited at the present time. He burnishes platinum into the cavity, carves up in wax part to be restored and then burnishing platinum or gold over that, leaving "a suitable part of the wax remaining uncovered." All the metal part is invested and wax is boiled out and solder is flowed into the metal lined matrix.

This practically brings us up to the present day inlay methods. I have endeavored to ferret out those to whom originality of the different methods and modifications belong. It is surprising that many times methods will be recorded in Society proceedings, when the one who is demonstrating it either enthusiastically lays claim to its origin or development or else passively allows others to think he is the one entitled to credit. It may be that I have given credit to some one to whom credit does not belong, but I have searched records of dental journals as best I could, to make this short history of the evolution of inlays as complete and as authentic as possible.

# COMMENCEMENTS

## COMMENCEMENT AT THE ILLINOIS.

The sixth annual commencement exercises of the college of Dentistry, University of Illinois, was held May 31st at Handel hall, Dean Geo. W. Cook, presiding. Degrees were conferred by Edmund Janes James, Ph. D., LL. D, president of the University. Class roll was called by C. E. Jones, secretary of the dental faculty. Class roll follows:

Thomas A. Ashworth.	Maurice Lasker.
Walter E. Becker.	Samuel A. Levin.
Ezra T. Clark.	Bradley F. Lockwood.
Carleton Cleveland.	George Ernest Lyons.
Benjamin B. Cronk.	Thomas J. McCarthy.
William John Dierks.	Maynard M. Marquis.
Ralph B. Driver.	Thomas J. McCarthy.
Joseph Atwood Dunn.	James Steele McCreight.
Dorsey Boatman Davis.	Lawrence B. Murphy.
Leo J. Fels.	Waleryan Waclaw Nowacki.
Clarence L. Foley.	Leroy Henry Phifer.
David A. Frankel.	Alexander A. Shere.
Henry A. Frey.	Joel Isschar Singer.
Abraham N. Halperin.	Harry T. Spangler.
Thomas. E. Hoover.	Johanne C. Thomson.
William B. Hendricks.	George William Wheeler.
Aaron Bloom Harris.	Anthony J. Zimonth.
Joseph Elmer Jacobs.	

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## CHICAGO COLLEGE OF DENTAL SURGERY.

The twenty-fifth annual commencement exercises of the Chicago College of Dental Surgery were held at the Garrick Theater May 28. Degrees were conferred by Truman W. Brophy, M. D., D. D. S., LL. D., President of the faculty. The degree of LL. D. was conferred upon Rodrigues Ottolengui, M. D. S., by President H. B.

Brown, President of Valparaiso University, and the faculty address was delivered by Hart J. Goslee, D. D. S. Following is class roll:

Edward Porter Ahrens	Walter Louis Neely
Harry Barnett	Walter Clement Noel
Herbert Dickey Britan, B. A.	Edward Joseph Nourie
Robert Brupbacher	William Norwood
Frederick Peter Baker	Paul Nespoulous, M. D., D. F.
Arthur John Casner	M. P.
Theron Brown Childs	George Clinton Niles
Howard Wade Clarke	Ole Boe Nagelsaker
Clarence Whitman Cox	Antoine Joseph Oidtman
Chester LeRoy Cloes	William Henry Petty
Martin Henry Duffy	William Harry Porter
Clarence Henry Ellingsen	Elbert Crosby Pendleton
William Charles Faust	John Charmichael Purdie
Gualtiero Fiordelmondo, M. D.	Albert Frederick Quick
Frederick Alfred Fidler	William Aloysius Quinlan
Robert Denton Gee	Frederick Albert Randolph
Helmar Gustavus Green	Sylvester Albert Ridley
William Eli Groff	Dana Wayne Ross
Russell Neil Hill	William Edwin Russell, Ph. G.
Robert Smiley Howe	R. Dale Russell
Keron Jerome Holland	John Heber Rockwell
Morrell Winfred Hooker	Joseph Ernest Schaefer
Harold Harlan Heiple	Frank Irvin Shaffer
Walter Smith Hoge	Charles Matthews Smith
Ralph MacMurphey Havens	John Mitchell Smith
Arthur Fletcher Kenney	Arthur Garfield Snaveley
Ray Kirkpatrick, B. A.	Harry Lee Stratton
Frederick William Koehler	Robert James Steven
August Henry Lemke, B. Sc	Benjamin Rush Sugg
Guy Leonidas Lemley	Don Amos Shinn
George Clarence Lipton	Samuel Baugh Thatcher
Charles Henry LeFevre	William Irving Timmer
Ira Esto McCarty	Frank Henry Uppendahl
Joseph Mattingly	William Deitrich Vehe
Frederick Carl Meyers	Charles Enos Woodward

William Jerome Morrissey  
I. Caldwell Morrical  
Thomas Albert Montgomery  
Morton Hanson Mortonson  
Leslie Avison Muedeking  
Carl William Mueller  
Raymond David Murray  
Albert Emmett McEvoy

Hyman Lawrence Weber, A. M.  
M. D.  
Ernest Dana Watts  
H. Francis Watts  
David Herbert Woodward  
Guido Allie Walther  
Giulo Cesare Zunini, M. D.  
William Ellis Zavitz

COMMENCEMENT EXERCISES.

Commencement exercises of the Northwestern University Dental School were held Wednesday, May 29, 1907, at Garrick Theater.

Following is the class roll:

Agar, Homer Ernest  
Agern, Arthur Cornelius  
Akin, Delbert Arthur  
Allender, Lafe Carl  
Barrett, Carleton N.  
Bast, Edward John  
Baur, Armin Peter  
Bell, Charles Edgar  
Bergman, Arthur Gustave  
Bloom, A. Bernard  
Bolton, Richard Mark  
Brass, David James  
Bressler, Arthur Malcolm  
Brockman, Cline  
Brown, Evan Alma  
Burket, George Edward  
Bushnell, Arthur Dennis  
Carroll, William Preston  
Casler, John Maynard  
Cassill, Moses Anthony  
Chappuie, Gordon  
Concklin, Lewis Knapp  
Conley, Willard Thomas  
Cook, Ora Ivan  
Courtice, Oliver J.

Kindt, Herbert P.  
Koenig, August C.  
Landee, Guy Arthur  
Lawver, Harry Edward  
Lee, Arthur Brush  
Linne, Alvin Barton  
Long, J. Harding  
Longwell, Ralph Elliott  
McBroom, Samuel  
McKenna, Daniel W.  
McLaren, Arthur Charles  
Mahony, Peter  
Mason, William Charles  
Merchant, Thomas P.  
Metcalfe, Frank  
Miller, Theodore  
Mitchell, Harry Chandler  
Mitten, Charles Louis  
Myers, Cyrus A.  
Myles, Andrew Watson  
Norris, Luke Leo  
Owens, Richard Evan  
Pailthorp, Arthur Wescott  
Pfouts, Royal Edgar  
Power, William Bernard

Cox, Nick Williams	Rasch, Christian Albert
Danforth, Edward R.	Rice, Ora Ray
Drake, Don Delbert	Richmond, John Edgar
Fisher, Dorsey D.	Rightman, Simon Maurice
Forsyth, John Elder	Rodgers, Frank
Foster, Ota F.	Ross, Albert Taylor
Frankel, James D.	Scranton, Harmon Stuart
Grossman, Morris	Sedwick, Harry L
Heap, George Roy	Shuttleworth, Thomas
Hess, Albert C.	Snyder, Harry Dale
Johnson, Alvin Fabian	Sommervill, George Byron
Johnson, James Edward	Spearman, Kelly R.
Johnson, Lawrence Raymond	Squires, William Alonzo
Jones, Orlando V. D.	Thomas, Arthur Garfield
Kelley, Boyd Longwell	Thompson, George Augustus
Kennedy, William Small	Van Sant, Leport Richard
Kerr, Charles Henry	Wehrheim, John Lawrence
Keyes, John August	Wilson, John J.
Keyser, Dixon Baker	Winthrope, Paul W.
Kimball, George G.	Wipf, Jacob H.

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#### PROGRAM FOR JAMESTOWN DENTAL CONVENTION.

NORFOLK, VA., SEPT. 10-11-12.

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##### OFFICERS.

Hon. President, Dr. J. Y. Crawford, Nashville, Tenn.; President, Dr. V. E. Turner, Raleigh, N. C.; First Vice President, Dr. B. Holly Smith, Baltimore, Md.; Secretary General, Dr. George F. Keese, Richmond, Va.; Treasurer, Dr. Mark F. Finley, Washington, D. C.

##### PROGRAM.

Tuesday, Sept. 10th, 1907.

9:30 A. M.

Meeting called to order by Dr. Burton Lee Thorpe, St. Louis, Mo., Chairman Committee on Organization.

Invocation—Rev. Dr. C. L. Bane, Pastor Memorial M. E. Church, Norfolk, Va.

Address of welcome—Hon. Harry St. George Tucker, President Jamestown Exposition Company.



## **· JAMESTOWN DENTAL CONVENTION.**

Address of welcome—Hon. Claud A. Swanson, Governor of Virginia.

Address of welcome—Dr. Joseph W. Eggleston, Richmond, Virginia.

Address of welcome—Dr. W. G. Mason, Tampa, Fla., President Southern Branch N. D. A.

Address of welcome—Dr. J. Y. Crawford, Nashville, Tenn., in behalf of the profession of the South.

Response to the addresses of welcome—Dr. J. D. Patterson, Kansas City, Mo.

Address by the President—Dr. V. E. Turner, Raleigh, N. C.

11 A. M.

Lantern lecture—Prof. W. D. Miller, Berlin, Germany, "Demonstrations of preparations relating to the wasting (so-called erosion) of the teeth."

Discussion opened by—Dr. L. G. Noel, Nashville, Tenn.; Dr. Wilbur F. Litch, Philadelphia, Pa.

Tuesday Afternoon Session, 2:30 P. M.

Illustrated lecture—Dr. Chas. L. Alexander, Charlotte, N. C., "Gold Inlays."

Discussion opened by—Dr. W. H. Taggart, Chicago, Ill.; Dr. H. Herbert Johnson, Macon, Ga.

Tuesday Evening, Sept. 10th, 8:00.

Smoker at Inside Inn, Dr. B. Holly Smith, Chairman, Baltimore, Md.

Wednesday Morning, Sept. 11th, 9 A. M. to 1 P. M.

Clinics in Convention Hall—Dr. Clarence J. Grieves, Baltimore, Md., Chairman.

Wednesday Afternoon, Sept. 11th, 2:30 P. M.

Illustrated paper—Dr. F. T. Van Woert, Brooklyn, N. Y., "Is the Cemented Filling the Filling of the Future?"

Discussion opened by—Dr. Wm. K. Slater, Knoxville, Tenn.; Dr. Joseph Head, Philadelphia, Pa.

Wednesday Evening, Sept. 11th, 8:00 P. M.

Convention to be entertained as guests of the profession of Virginia.

Thursday, Sept. 12th, 1907, 9 A. M. to 1 P. M.

Clinics in Convention Hall.

## AMERICAN DENTAL JOURNAL.

Thursday Afternoon, 2:30 P. M.

Illustrated lecture—Dr. R. Ottolengui, New York City, N. Y.,  
"The Purposes and Accomplishments of Modern Orthodontia."

Discussion opened by—Dr. G. Edmond Kells, New Orleans, La.;  
Dr. Henry W. Morgan, Nashville, Tenn.

Adjournment.

A cordial invitation is extended to all ethical dentists to become members and attend the convention.

### COMMITTEE ON ORGANIZATION.

Dr. Burton Lee Thorpe, St. Louis, Mo., Chairman; Dr. Thos. P. Hinman, Atlanta, Ga., Vice Chairman; Dr. H. Wood Campbell, Suffolk, Va., Secretary; Dr. F. W. Stiff, Richmond, Va., Treasurer; Dr. R. H. Walker, Norfolk, Va.; Dr. J. E. Chace, Ocala, Fla.; Dr. Clarence J. Grieves, Baltimore, Md.

All clinics, lectures and meetings of the Jamestown Dental Convention will be held in the Convention Hall, on the left of the main entrance to the Exposition Grounds.

Admittance to this building can be had either from the outside or inside of the grounds.

H. WOOD CAMPBELL,

Secretary Organization Committee.

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### JAMESTOWN DENTAL CONVENTION.

Norfolk, Virginia, June 24th, 1907.

Editor, THE AMERICAN DENTAL JOURNAL, Chicago, Ill.

Dear Doctor:—

In view of the statements that have gone out in relation to the lack of accommodation and high hotel charges in the vicinity of the Jamestown Exposition, we, the Virginia members of the Organization Committee of the Jamestown Dental Convention, deem it wise to make a formal statement of the situation, that the members of the profession who contemplate attending the Convention at the Jamestown Exposition, Norfolk, Virginia, September 10-12, may not be misled or deterred in their purpose:

While at this time the Exposition is not entirely completed, it presents a very attractive appearance and is well worth seeing, and by the date set for the convention it will not only be fully completed, but will be at the very height of its perfection.

Aside from any attraction that is offered by the Exposition, the

assembling in Hampton Roads of the fleets of the nations of the world is amply worth the trip to the Jamestown Exposition.

The Jamestown Exposition Grounds are not located in any one city, but are nearly equi-distant from the Tidewater Cities of Norfolk, Portsmouth, Newport News, Hampton and Old Point Comfort and within thirty minutes' ride by rail or water of any one of them.

The hotels and cottages of the summer resorts of Pine Beach, Luckroe Beach, Ocean View, Willoughby Beach, Cape Henry and Virginia Beach will be utilized for the accommodation of visitors.

The suburbs of Norfolk, Portsmouth and Newport News, such as West Norfolk, Port Norfolk, South Norfolk, Berkley, Riverside, River View, Edgewater, Lamberts Point, Parke Place, have many comfortable homes that will be opened to receive guests, and are all well connected with electric lines of street railway to points of departure for the Exposition Grounds.

We append a list of some of the leading hotels and their rates per day. In order to secure these rates it will be necessary to make reservations not later than August 15th.

The Inside Inn, with a capacity of 3,000 persons, will be the official headquarters of the convention. The following are the rates of the Inside Inn:

European Plan, without bath, two persons in a room, which includes breakfast, privileges of the Inn, and admission to the Grounds after the guest has registered at the hotel, \$2.50 per day for each person. If room is occupied by only one person, the rate will be \$3.50 per day.

American Plan, with bath and toilet, \$8.00 per day for one person includes breakfast, privileges of the Inn, luncheon and our \$1.00 evening Table D'Hote dinner with wine, admission to the Grounds after the guest has registered at the hotel, \$3.50 per day for each person. If room is occupied by only one person the rate is \$4.50.

The rates for rooms fronting the sea, or the sea and pine grove:

American Plan, if room is occupied by only one person, the rate will be \$6.00 per day. If room is occupied by two persons the rate will be \$8.00 for the two persons.

American Plan, with bath and toilet, \$8.00 per day for one person in a room, if room is occupied by two persons the rate will be \$10.00 for two persons:

The following is a partial list of Norfolk and Portsmouth hotels:

Algonquin Hotel, Granby Street and College Place, \$1.00 per day and up.

Atlantic Hotel, Main and Granby Streets, \$1.00 per day and up.

Colonial Hotel, 202 Granby Street, \$1.00 per day and up.

Hotel Fairfax, City Hall Avenue and Randolph Street, \$1.50 per day and up.

The Monticello, City Hall Avenue and Granby Street, \$1.50 per day and up.

Gladstone Hotel, Main and Nebraska Streets, \$1.00 per day and up.

Haddington Hotel, Granby Street and City Hall Avenue, \$1.00 to \$3.00 per day.

Hotel Savoy, Granby Street and City Hall Avenue, \$1.00 to \$3.00 per day.

Carolina Hotel, Atlantic and Plume Streets, \$1.00 per day and up.

St. Denis Hotel, Main Street and Roanoke Avenue, \$1.00 per day and up.

Terminal Hotel, Plume and Atlantic Streets, \$1.00 per day and up.

Henry Seelinger, 39-41 City Hall Avenue.

Lynnhaven Hotel, Freemason and Granby Streets, \$2.50 per day and up.

Union Hotel, 35 Brewer Street, 50c per day and up.

#### STAG HOTELS.

The Lee Stag Hotel, 97 Bank Street, \$1.00 per day and up.

McDonald's, Main Street and Commercial Place, \$1.00 per day and up.

Victoria, 359-361 Main Street, \$1.50 per day and up.

Henry Seelinger, 39-41 City Hall Avenue.

#### PORTSMOUTH.

Hotel Monroe, Court and High Streets, \$1.00 per day and up.

Hotel Fairfax, Crawford and High Streets, \$1.00 per day and up.

Pearson Hotel, High and Water Streets, \$1.25 per day and up.

In addition to the hotels named above, there are hundreds of private boarding houses and rooming houses at which visitors may secure accommodations at reasonable rates.

R. H. Walker, Norfolk, Va.; F. W. Stiff, Richmond, Va.; H. W. Campbell, Sec'y. Organization Committee.

# MEETINGS

## **INSTITUTE OF DENTAL PEDAGOGICS.**

The executive committee selected New Orleans for the fifteenth annual convention, and December 30, 1907, and January 1 and 2, 1908, the dates.

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## **NATIONAL ASSOCIATION OF DENTAL SALESMEN.**

The second annual convention of dental salesmen will be held at Hotel Shenley, Pittsburg, Pa., July 8, 9, 10, 1907. For information, address W. L. Smith, 800 Penn avenue, Pittsburg, chairman of arrangement committee, or E. H. Frank, 12 Brisbane building, Buffalo, chairman of advertising committee.

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## **TENNESSEE STATE DENTAL ASSOCIATION.**

The Tennessee State Dental Association held its annual meeting July 9th, 10th and 11th. The next annual meeting will be held at Nashville. The following were elected as officers for the ensuing year: Dr. C. A. Sevier, Jackson, president; Dr. J. R. Leach, Clarksville, first vice-president; Dr. C. H. Taylor, Memphis, second vice-president; Dr. C. A. Tavel, Memphis, recording secretary; Dr. S. L. Rich, Nashville, treasurer; Dr. DeLane Kinney, Nashville, corresponding secretary.

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## **PENNSYLVANIA STATE DENTAL SOCIETY.**

The Pennsylvania State Dental Society met in Pittsburg July 9-10-11. Five hundred dollars was appropriated from the treasury for the prosecution of dentists practicing illegally. The following were chosen as officers for the ensuing year: President, Dr. P. K. Filbert, of Pottsville; first vice-president, Dr. C. B. Bratt, of Pittsburg; second vice-president, Dr. W. D. DeLong, of Reading; recording secretary, Dr. L. M. Weaver, of Bethlehem, and treasurer, Dr. W. A. Spencer, of Carbondale.

**THE NORTHERN IOWA DENTAL SOCIETY.**

The Northern Iowa Dental Society will hold its thirteenth annual meeting in Sioux City, September 4, 5 and 6.

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**VIRGINIA STATE DENTAL ASSOCIATION.**

The Virginia State Dental Association will hold its annual meeting the 9th of September, 1907, at the Inside Inn, Jamestown Exposition. There will only be a short session, as the activities of our members are being merged with those of the Jamestown Dental Convention. This will be strictly a business meeting. No committees will be appointed, and no work done other than certain important matters of business which will be designated later in a circular letter to be issued to each member.

W. H. PEARSON,

Assistant Corresponding Secretary.

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**MISSISSIPPI DENTAL ASSOCIATION.**

The fourteenth annual meeting of the Mississippi Dental Association, held in Meridian, Miss., May 28th, 29th and 30th, proved to be the best in the history of the Association. A great many young men were received as members and the membership is double what it was three years ago.

The social feature was a banquet tendered the Association by the Meridian Dental Society and was presided over by Dr. C. J. Washington, of Memphis, Tenn., as toastmaster, and many well-chosen toasts were responded to by the members present.

The following officers were elected:—President, Dr. L. A. Smith, Port Gibson; first vice-president, Dr. J. F. Brunson, Meridian; second vice-president, Dr. C. F. Boger, Natchez; secretary, Dr. E. Douglas Hood, Tupelo; corresponding secretary, Dr. L. B. Price, Corinth; treasurer, Dr. C. C. Crowdee, Kosciusko.

The Association will meet in Jackson next year.

## MISCELLANEOUS

### SCIENCE TO MAKE DENTURES.

I claim that it takes more science to make a set of teeth than any other work, and a good dentist can always be recognized by his ability to do that class of work.—*C. V. Vignes, Dental Headlight.*

### REMEDY FOR A WARPED PLATE.

A rubber plate which has been bent out of shape will return to its original shape if dropped in hot water and kept there a few moments.—*Pacific Dental Gazette.*

### TO PREVENT ETCHING.

To prevent "etching" of facings when using twenty per cent platinum solder, paint the surface with a creamy solution of magnesium carbonate before investing.—*Dr. A. E. Maneson, Review.*

### TO ETCH THE SURFACE OF A GOLD INLAY.

When the inlay is ready to set, dip the part to which the cement is to adhere in mercury, coating it evenly, spreading it around with the aid of a pellet of moist cotton held in the fluid. Then invert over an alcohol flame and drain off the mercury, which will leave a rough, crystalline surface.—*C. I. Hadley, Dental Review.*

### SENSITIVE CAVITIES.

Zinc iodine crystals  $1\frac{1}{2}$  gr. iodine crystals 2 grs., make a solution of the above in glycerin. Wind a small pellet of cotton on a broach, dip in the solution and apply to the decay. To remove the stain use hydrogen dioxide. I have found this very effective.—*E. M. S. Fernandez, Dental Review.*

### SENSITIVE CERVICAL MARGINS.

If bicarbonate of soda is incorporated in the tooth powder used by the patient, sensitiveness will be relieved and he will be enabled to thoroughly masticate, bringing about a normal condition of the saliva and the alkaline powder will not be long required.—*D. Spalding, Dental Register.*

**HICCOUGHS.**

In obstinate hiccup try 20 grains of quinine at a dose; you will be pleased with the results.—*Wherrell, Med. Arena.*

**WHEN AND WHEN NOT TO EXTRACT.**

- (a) If not more than three scattered teeth remain, extract them.
- (b) If two molars or bicuspid remain on each side, do not extract.
- (c) If only the incisors remain, extract. (d) If four or five teeth remain on one side of the jaw and none on the opposite side, extract.—*Wes. Dental Journal.*

**NOVOCAIN.**

Novocain is from five to six times less toxic than cocain; it does not irritate in the slightest degree when injected; it is soluble in its own weight of water; it will combine with adrenalin in any proportion; it is readily absorbed by the mucous membranes. It seems very probable that novocain has been destined to rob local anesthesia of its dangers and to be the ideal substitute of cocain.—*Herman Prinz, Dental Era.*

**FORMALDEHYDE.**

The great value of formic aldehyde lies in its great power of penetrating tissues, sterilizing as it goes. In teeth which have been treated, and in which every attempt to seal them up is followed by pain and tenderness, a 5 per cent solution used as a dressing on a wisp of cotton and left in for a week will remedy all that, and the tooth may be filled with the assurance that all will be well.—*B. J. T. Bennette, Dental Record.*

**CHLOROFORM WATER AS HEMOSTATIC.**

It acts with marvelous rapidity; it has not the slightest disagreeable taste or odor; it is not escharotic; it is cheap, easily obtainable, and can be made as required; it is not unpleasant to apply and does not interfere with the surgeon in his operations. Spaak recommends a two per cent simple solution in water.—*Medical Times.*

**HYDRONAPHTHOL AS A PULP-CAPPING.**

To avoid the removal of the layer of softened dentine, which if removed, would probably necessitate the removal of the pulp, mix equal quantities of hydronaphthol and cement, and place as a capping on the layer of decalcified dentine, allowing it to set. Then proceed with the filing. The hydronaphthol arrests bacterial action.—*A. W. McCall, Federal Dental Journal.*



## MANIPULATING MOLDABLE PORCELAIN.

I believe that the model method is preferable for adjusting the material. There are many accessible cavities that can be kept dry for a reasonable length of time, and it can be done much more rapidly by molding directly to the cavity. In the class of cases where it is indicated, however, I think it is desirable to make a model. You merely prepare the cavity, take an impression and dismiss the patient. If your model is not perfect, the final fitting may be advantageously made in the mouth. The fitting is done directly to the cavity, and the questionable feature of the accuracy of the model is eliminated.—*F. E. Roach, Chicago, in Review.*

## PROPHYLAXIS.

The deep thinkers of the medical profession admit that if they can bring their prophylaxis to such a degree of perfection as to eliminate disease they will have accomplished their highest mission. If we can follow the same course in the practice of dentistry, we shall be the highest idealists of our time, and that is the *somnum bonum* of life. The profession and the public alike must be educated before these higher ideals can be grasped and practiced. This is a hard matter to accomplish because of the apathy which exists in the world, but it is certain to come. It is difficult to break off from old habits. It is well to know that mere mechanics is not the highest attainment so far as dentistry is concerned.—*Alfred Owre, Minneapolis, Minn., in Review.*

## NARCOTILE.

I have administered narcotile some two hundred times with almost invariable success, and by success I mean that the anesthesia was perfect—that is, profound enough in 90 per cent of the cases. A few of the remaining 10 per cent woke up before I was through with them. There was no serious disadvantage in that, however, because the patients are in a state of analgesia for quite a time before regaining complete consciousness, during which time I can operate with very little pain, as they afterward admit. I often have trouble with children, in making them take the inhalation. Children are always afraid of the inhaler, and the usual mild coaxing is of no avail. I have adopted the plan lately, with highly satisfactory results, of spraying a piece of cotton with the anesthetic, and applying same to the nose. The analgesia produced is very gratifying.—*W. H. Reaben, McComb, Miss., in Review.*

## PERSONAL AND GENERAL

**Crist-Anderson**—Dr. J. H. Crist and Miss Annie Anderson, both of Chester, Pa., were married July 3d.

**Fire**—Dr. B. F. Wilson, of Morrilton, Ark., suffered the loss of \$1,500 by fire May 25th. Insurance \$800.00.

**Dissolution of Partnership**—Drs. Baker & Hunt, a dental firm at Portsmouth, Ohio, have dissolved partnership.

**Dentist Receives Judgment**—Dr. L. O. Green, a Chicago dentist, obtained a verdict of \$375.00 for dental services against a delinquent patient.

**Hall-Hilderbrandt**—Dr. Robert G. Hall, of Franklin, Pa., and Miss Rose Hilderbrandt, of Sowanda, N. Y., were married July 3d at the latter place.

**Arnold-Smouse**—Dr. William Ernest Arnold, of Bucyrus, Ohio, and Miss Blanche Smouse, of Wheeling, W. Va., were married June 24th at the latter place.

**Attempts to Commit Suicide**—Dr. Gus Weiss, a dentist at Louisville, Ky., attempted suicide July 2d by shooting himself just below the heart. His recovery is doubtful.

**Arrested as Fire Bug**—E. A. Hessler, a dentist in Pittsburg, is under arrest for setting fire to the dental office of Dr. J. I. Deroy, for whom Hessler had worked.

**Blue Laws in Toronto**—The Toronto police force are investigating a report that a dentist in that city extracted a tooth on Sunday. We are not informed as to the penalty.

**New Dean**—Dr. W. T. Walker, of Denison, Texas, has been elected dean of the State Dental College, and will have the chairs of operative dentistry and crown and bridge work.

**Physician Arrested for Extracting Teeth**—Dr. E. R. Taylor, a Minneapolis physician, has been arrested on the charge of extracting teeth without a license to practice dentistry.

**Serious Accident to Dentist**—An explosion of gasoline in the office of Dr. R. G. Williams at Cape Girardeau, Mo., caused serious injuries to the doctor and a loss of \$75,000 by the destruction of two buildings.

**Mandamus**—Dr. L. O. Bernard has mandamusd the state dental board of Washington. He is a graduate of the Northwestern University and practiced six years in Iowa and claims he passed the examination.

**Damages Not Allowed.**—In the suit of Arthur Simpson vs. estate of Dr. W. B. Pearson at Anamosa, Iowa, the verdict was in favor of the defendant. Simpson had sued the estate for malpractice on part of deceased.

**Commits Suicide.**—Dr. H. S. Latshaw, a dentist at Vincennes, Ind., committed suicide June 28th by firing a bullet into his brain. He left notes to relatives. The cause of his suicide was due to the death of his wife and daughter and financial troubles.

**Movement of the Army Surgeons.**—Dental Surgeon Hugh Voorhies, now at the Presidio of San Francisco, has been ordered to proceed to Fort D. A. Russell for duty, relieving Dental Surgeon Franklin Wing, who will proceed to Manila for duty in the Philippines division.

**Presented with a Silver Service.**—Dr. L. E. Custer of Dayton, Ohio, was recently presented with a silver service set at the dental convention at Los Angeles. This tribute to Dr. Custer was in recognition of his services to the profession in perfecting a new process for making gold inlays.

**Elected Secretary.**—Dr. C. C. Weaver, of Hillsboro, Texas, who for ten years has been a member of the State Board of Dental Examiners of Texas, has been elected secretary of the State Dental College, and will give his entire time to this institution, also fill the chair of prosthetic dentistry.

**Turning Students Away.**—Limited accommodations at the University of Minnesota has caused the number of matriculants being restricted. The present class of freshmen, over one hundred, will be cut down to seventy-five and only that number will be allowed to register for the fall term.

**State Board of Arkansas.**—Governor Pindall of Arkansas has appointed the following to act as members of the state board of examiners: Drs. Charles Richardson, Fayetteville; C. C. Sims, Dardanelle; C. G. Farrow, Little Rock; Charles Berkstresser, Eureka Springs, and A. T. McMillin, Little Rock. The term of membership of the board is two years.

**What An Accident Policy Means.**—The United States Court of Appeals has decided in the case of John V. Thompson vs. Fidelity & Casualty Company of New York, that a policy in an accident company does not cover blood poisoning. A dentist tried to recover \$1,000 because of blood poisoning caused by septic matter entering his eye while extracting teeth, causing him to be disabled for ten weeks.

**Removals.**—Drs. J. E. Storey from Morenci, Ariz., to Beaumont, Texas; H. O. Smith from Nevada City, Cal., to Sacramento, Cal.; J. W. McVicar from North Branch, Mich., to Caro, Mich.; F. E. Hearn from Sylva, N. C., to Atlanta, Ga.; H. M. Herron from Williamston, Mich., to Lansing, Mich.; B. C. & W. K. Delano from New London, Wis., to

Long Beach, Cal.; O. R. Rice from Boscobel, Wis., to Delavan, Wis.; W. H. Davis from Saugatuck, Mich., to Vermontville, Mich.; E. F. Parr from Berkeley, Cal., to Visalia, Cal.; E. H. Hollem from Aurora, Ill., to Rockford, Ill.

**Robberies.**—Drs. Lee, St. Joseph, Mich., loss \$40.00; E. L. Hinshaw, Kansas City, Mo., loss not given; H. K. Lathrop, Jr., Detroit, Mich., loss \$20.00; Theodore Phillips, Canton, Ohio, loss not given; H. W. Barton, Akron, Ohio, loss \$8.00; W. T. Shaw, Lansing, Mich., loss \$100.00; J. E. Stoffel, Lansing, Mich., loss \$15.00; B. M. Herron, Lansing, Mich., loss \$25.00; R. V. Dillingham, Lansing, Mich., loss \$20.00; Theodore Kuechle, Sheboygan, Wis., loss \$30.00; J. S. Danforth, Sheboygan, Wis., loss \$30.00; H. A. Dillingham, Sheboygan, Wis., loss \$30.00.

### WE MOURN THE LOSS BY DEATH OF THE FOLLOWING MEMBERS OF OUR PROFESSION.

**Dr. Dewar**, a dentist at Glencoe, Ont., died July 8th after an operation for appendicitis. He was thirty-eight years of age.

**Dr. A. D. Holland**, a dentist at Newport, Ark., died July 11th of paralysis. He was sixty-five years of age.



Fig. 1.

**852,159. Dental-Tool Handle**—Joseph Bode, Philadelphia, Pa., assignor to James W. Ivory, Philadelphia, Pa. Filed January 18, 1907. Serial No. 352,866. Claim.—1. A tool handle comprising, a casing, a tool holder therein, means for operating said tool holder in opposite directions, and a shoulder on said casing, said shoulder being adapted to be engaged by a shoulder on a tool.

Fig. 2.

**851,735. Dental Appliance**—Chester M. Dowell, Elkhart, Ind. Filed July 21, 1906. Serial No. 327,189. Claim.—1. A dental appliance comprising a pair of plates arranged one upon the other, a connection for said plates yieldingly connecting the latter at one end and holding their opposite ends normally spaced apart, a registering device for permanently retaining the occlusion of the jaws, and a clamping member constructed and arranged to hold the said spaced ends of the plates together against the action of the aforesaid connection.

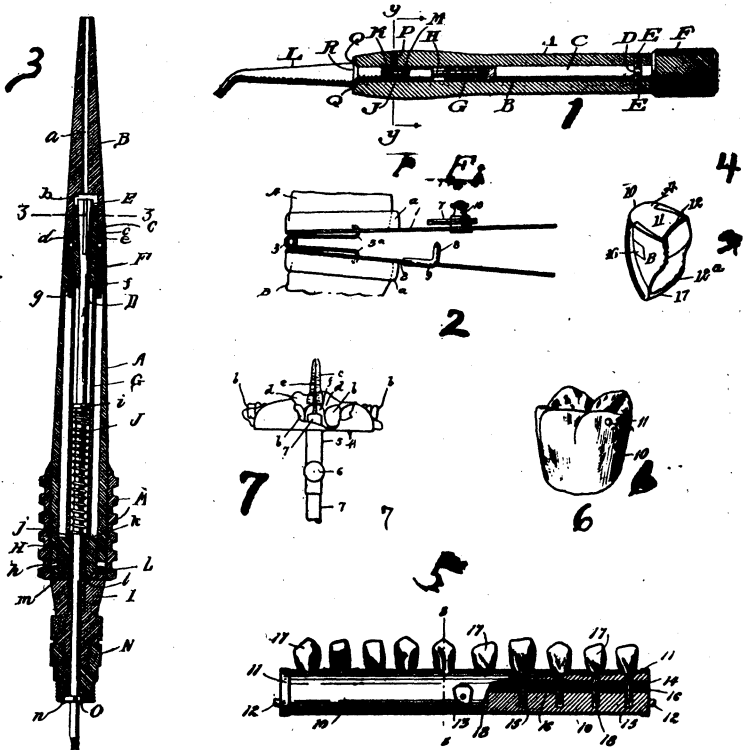
Fig. 3.

**849,208. Dental Handpiece**—Lyter H. Crawford, New York, N. Y. Filed April 13, 1906. Serial No. 311,548. Claim.—1. A dental handpiece

comprising a barrel or casing, a nozzle having a recess or chamber, a chuck located in said recess or chamber, a block for engaging said chuck, and means for actuating said block to clamp the tool in the chuck, said means comprising a sleeve arranged to be rotated on said barrel or casing and a longitudinally-movable member connecting said block and sleeve.

Fig. 4.

830,887. Denture—Robert M. Craig, Dennison, Ohio. Filed January 17, 1906. Serial No. 296,499. Claim.—1. A denture comprising a porcelain



having its posterior portion formed into a dovetail, a backing having a recess shaped to fit the dovetail, and a locking device for the backing.

Fig. 5.

854,486. Display-Carrier for Artificial Teeth—Joseph F. Gibson, York, Pa., assignor to The Dentists Supply Company, New York, N. Y. Filed March 7, 1907. Serial No. 361,170. Claim.—A device of the character described, comprising a support having a longitudinal hole, a coiled spring mounted in said hole, and a plurality of holes or recesses extending inward from the face of the support and crossing and extending below the longitudinal hole, whereby the pins of the articles to be

supported by said device may extend through and below the coiled spring and be held by the said recesses against removal from the support excepting by an endwise withdrawing movement.

**Fig. 6.**

**853,984. Tooth-Crown Model**—Chapin F. Lauderdale, Milwaukee, Wis. Filed March 7, 1906. Serial No. 304,765. Claim.—1. As a new article of manufacture, a tooth crown model formed of a hollow cap of flexible non-metallic material.

**Fig. 7.**

**854,283. Dental Root-Impression and Crown-Mounting Instrument**—John M. Evey, Monmouth, Ill. Filed March 24, 1906. Serial No. 307,940. Claim.—1. In a device of the character described, a tray comprising a bottom, flanged sides projecting in one direction therefrom, and an integral tubular shank projecting therefrom in a contrary direction.

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**OBITUARY.**

**Dr. Sullivan Lawrence Ward.**

Dr. S. L. Ward, one of the oldest residents of Lowell, Mass., died July 11th at his home in that city. Three years ago he suffered a stroke of paralysis and gradually failed until his death. Dr. Ward was born July 4th, 1820. His father, Dr. George Ward, located in the practice of dentistry in Lowell in 1837. Deceased engaged in practice with his father in 1846 and in 1847 he opened an office and continued in practice in the same office until 1904. Dr. Ward was married in 1852, and left a son and daughter, the only children born to them. For fifty years he was recognized as a progressive, conscientious and public-spirited citizen. In 1864 and 1865 he was an active member of the Massachusetts Legislature. He was one of the founders of the Merrimac Valley Dental Society, which eventually became the Northeastern Society. He was president of the Lowell Y. M. C. A. and had been a member of the Congregational Church since 1848. Deceased left two sisters and a brother, Dr. W. G. Ward, who also had been a professional partner.

We are indebted for above data to Dr. A. W. Burham, a partner and lifelong friend of Dr. Ward.

---

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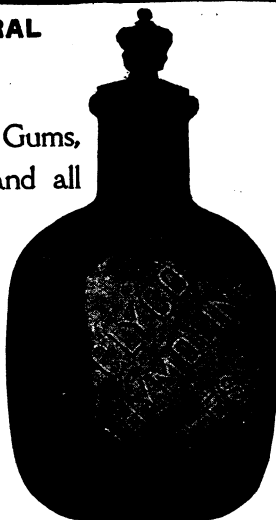
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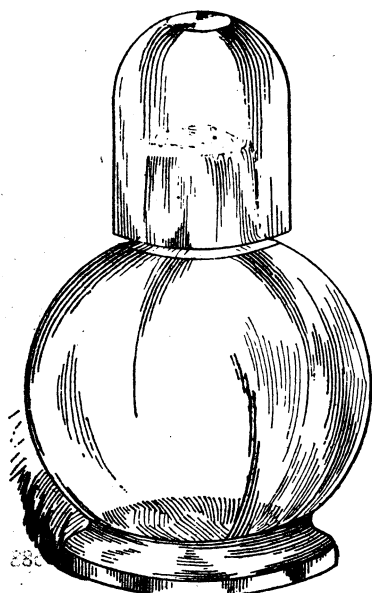
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